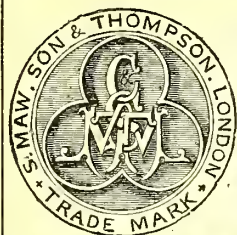


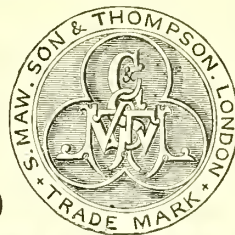


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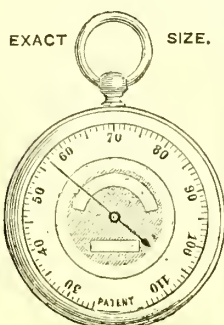
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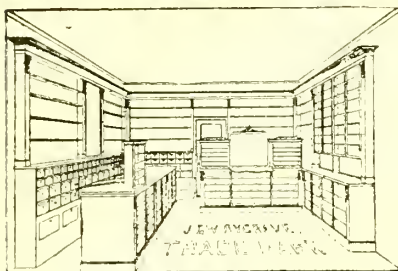
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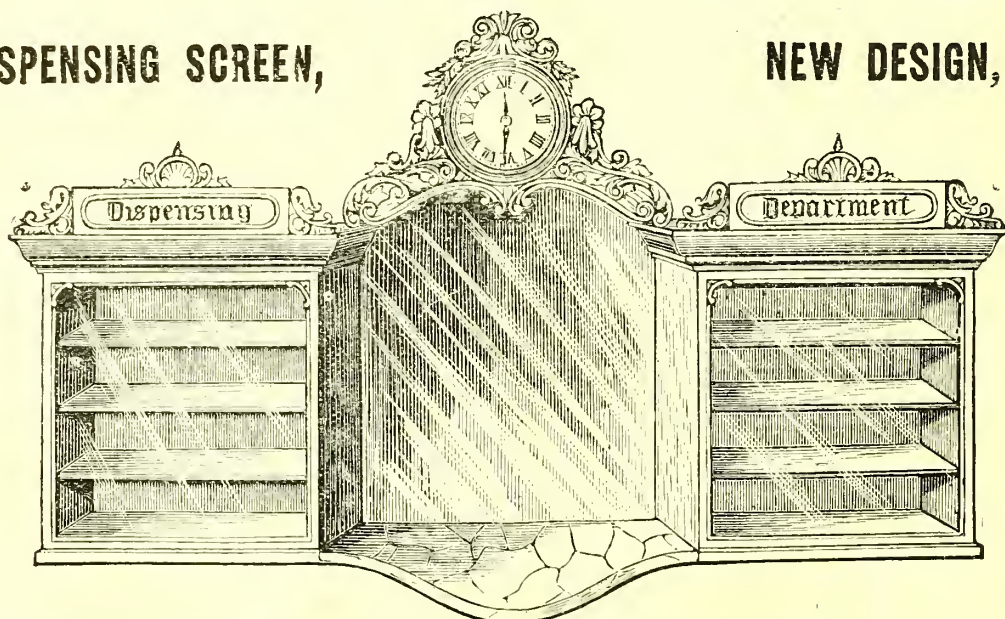
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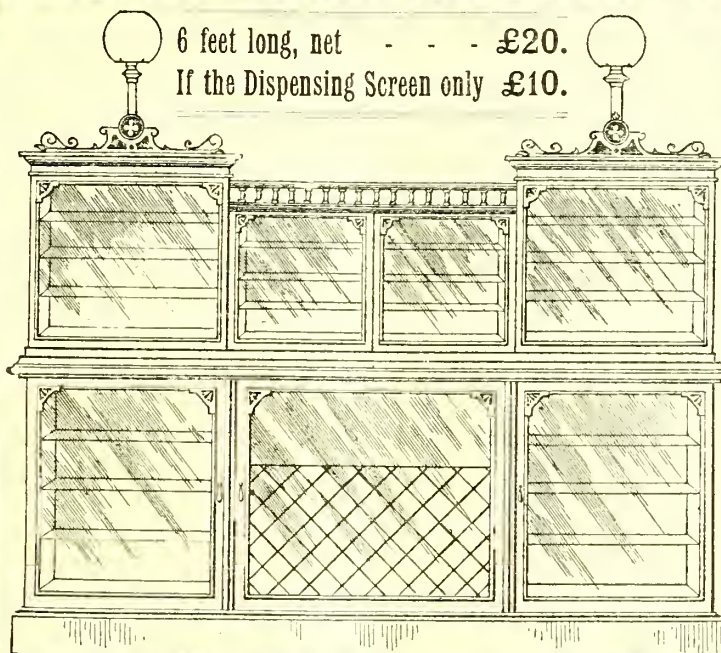
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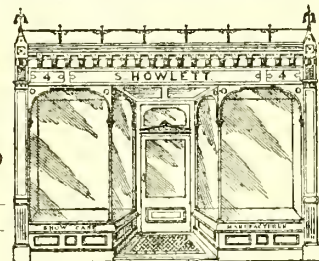
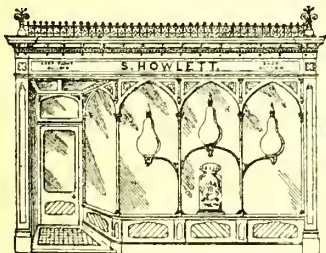
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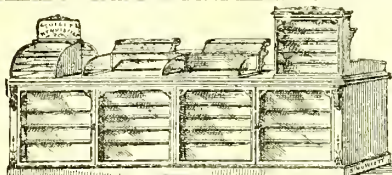
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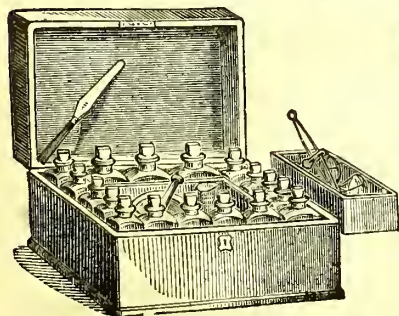
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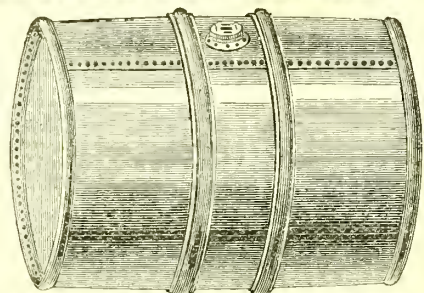
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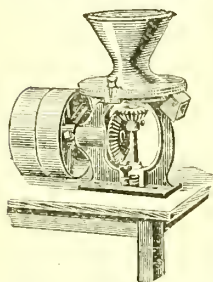
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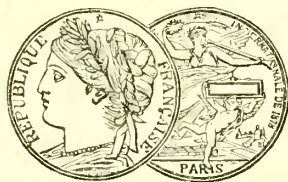
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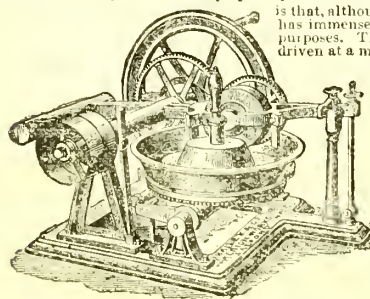


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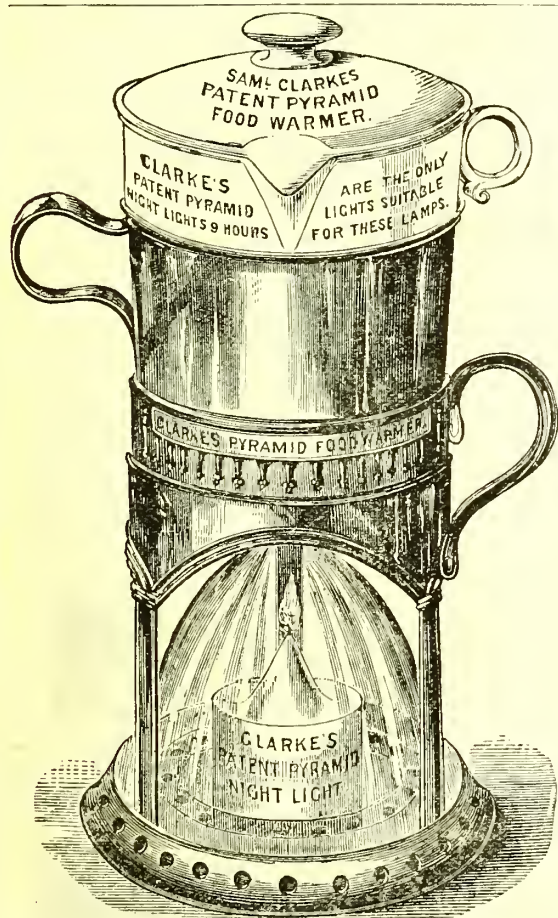
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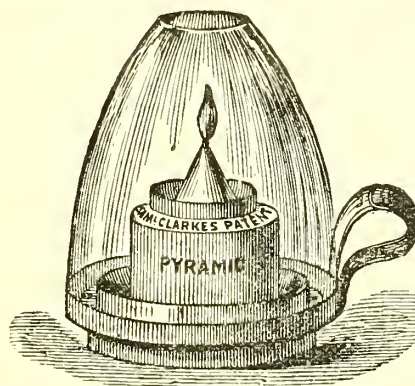
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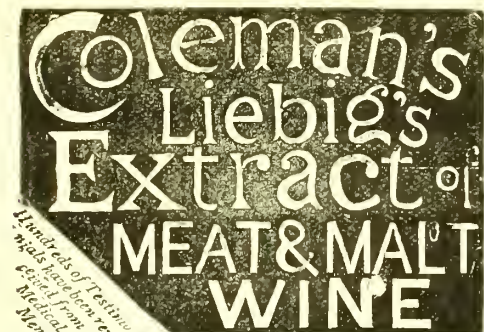
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THE MOST DELICIOUS SAUCE IN THE WORLD.

This cheap and excellent Sauce makes the plainest viands palatable, and the daintiest dishes more delicious. To Chops and Steaks, Fish, &c., it is incomparable. Sold by Grocers, Oilmen, Chemists, &c., in Bottles, 6d., 1s., and 2s. each.

CAUTION.—On each Yorkshire Relish Label is a Willow Pattern Plate and name, GOODALL, BACKHOUSE & CO. No other is genuine.

**Goodall's
Baking Powder**

THE BEST IN THE WORLD.

Makes delicious Puddings without Eggs. Pastry without Butter, and beautiful light Bread without Yeast. In 1d. Packets; 6d., 1s., 2s., and 5s. Tins.

**Goodall's
Quinine Wine**

The best, cheapest, and most agreeable tonic yet introduced. The best remedy known for Indigestion, Loss of Appetite, General Debility, &c. Restores delicate individuals to health and vigour. In Bottles, 1s. and 2s. each.

**Goodall's
Custard Powder**

For making delicious Custards without Eggs, in less time and at half the price. Unequalled for the purposes intended; will give the utmost satisfaction if the instructions given are implicitly followed. Sold in boxes 2d., 6d., and 1s. each.

**Goodall's
Blanc Mange Powder**

Is acknowledged by all to be the most convenient and economical preparation ever introduced, as, by its use, a most Rich and Delicious Blanc-mange may be produced in a few minutes at a trifling cost, and may be had of various flavours, i.e., Raspberry, Strawberry, Lemon, Almond, and Vanilla. Sold in Packets, 6d. and 1s. each.

**Goodall's
Egg Powder**

Acknowledged to be the only real substitute for eggs yet discovered. Its action on Cakes, Puddings, &c., &c., resembles that of the egg in every particular, enriching them in colour and flavour, rendering them most wholesome and nutritious. One penny packet will go as far as four eggs; and one sixpenny tin as far as twenty. In 1d. Packets; 6d. and 1s. Tins.

SOLE MANUFACTURERS—

GOODALL, BACKHOUSE & CO.,
WHITE HORSE STREET, LEEDS.

A monthly Price List of Druggists' Sundries, Patent Medicines, &c., can be had post free on application.

TOILET SPECIALITIES.

STURROCK'S OLEAQUA, OR HAIR WASH AND OIL IN ONE! Removes scurf, stimulates and strengthens the roots, and imparts a smooth, glossy, and sufficiently moist appearance to the hair without actually greasing it, quite superseding the use of the ordinary Pomades, Oils, or Hair Washes, and particularly suitable for warm climates.

Price 3/6, 5/-, 7/6, 10/-, 21/-.
NOTE.—The celebrity obtained by this article having caused several spurious imitations, it is necessary to observe that the original and only genuine is "STURROCK'S OLEAQUA."

STURROCK'S COMAURINE, OR GOLDEN-AUBURN HAIR LIQUID. A safe, certain, and satisfactory preparation for producing this fashionable colour of hair, retaining at same time its natural softness and beauty. 5/ and 10/ each bottle.

67 The above articles are prepared only and sold by

STURROCK & SONS,

Perfumers to Her Majesty the Queen, H.R.H. the Prince of Wales, and H.R.H. the Duke of Edinburgh.

66 REGENT STREET, LONDON;

33 PRINCES STREET, EDINBURGH

123 BUCHANAN STREET GLASGOW.

And may also be obtained through any of the Wholesale Drug & Perfumery Houses

THE BEST AND CHEAPEST
MENTHOL CONES,
50 0/0

CHEAPER THAN ANY OTHER HOUSE.

From 11d. per dozen upwards, subject.

Before buying elsewhere ask for our List.

THOS. CHRISTY & CO.,

155 FENCHURCH ST., LONDON.

Matthews's
Fullers
Earth.
Used in the Royal Nurseries, and highly recommended by the Faculty; it protects the Skin from cold winds, chaps, &c., and preserves the Complexion.

6d. & 1s.
Boxes.

SOLD BY ALL THE WHOLESALE HOUSES.

ROUSE & CO., 12 WIGMORE STREET, LONDON.

TRADE NOTICE.

WHEELER'S GLYCERINE JELLY is NOT LIABLE to Patent Medicine Stamp Duty. Any stock held bearing labels issued prior to 1st of January last may be EXCHANGED on returning it to the Wholesale House it was obtained from, or direct from 143 HACKNEY ROAD, LONDON, E.

Please observe the new label now in use is identical with the old, minus two words—

"BROKEN CHILBLAINS."

WHITE AND SOUND TEETH. JEWSBURY & BROWN'S ORIENTAL TOOTH PASTE



This old-established and increasingly favourite Dentifrice has been over Sixty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate. The original and only genuine is manufactured solely by

JEWSBURY & BROWN, Chemists, MANCHESTER,

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered. Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.

The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address cards and directions for enclosure.

PHOENIX
ESTABLISHED A.D. 1815
MARKING INK

GENUINE INDELIBLE

THE LEADING & **STANDARD ARTICLE**

PREPARED ONLY BY THE WIDOW OF THE LATE **JOHN MURPHY**

CHEMIST AT THE ORIGINAL ESTABLISHMENT

11, NILE STREET, EAST ROAD, HOXTON N.

TO HER MAJESTY'S ARMY CLOTHING DEPARTMENT.

TRADE MARK.
Estab^d 1815.

NO OTHER ADDRESS — BEWARE OF WORTHLESS IMITATIONS.

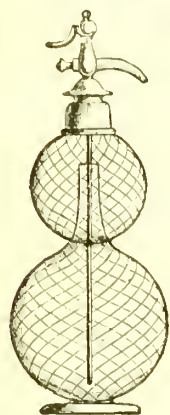
146 MINORIES LONDON E.C.
New York
Sydney

SODA WATER MACHINERY
AND ALL ACCESSORIES FOR THE TRADE

BRATBY & HINCHLIFFE
HEAD OFFICE
SANDFORD ST. ANCOATS, MANCHESTER.

BOXES BOTTLES, MACHINERY,
ESSENCES.
Catalogues, Circulars, Testimonials
Post Free

REDUCED PRICES.



**FEVRE'S
SELTZOGENES.**

Caned, each	2 PINT. 8/9	3 PINT. 10/2	5 PINT. 15/3	8 PINT. 26/
Wired, each	2 PINT. 8/3	3 PINT. 9/9	5 PINT. 14/6	8 PINT. 24/6

£2 worth or more, 5 per cent. discount.

MAY, ROBERTS & CO., 9 CLERKENWELL ROAD, LONDON, E.

Temporary Address during Rebuilding of Premises—9 MOOR LANE, E.C.

Telegraphic Address—"MOAB LONDON."

BETTS & CO. LIMITED

(ESTABLISHED IN 1840),

SOLE MAKERS IN GREAT BRITAIN OF

METALLIC CAPSULES,

AND PATENTEES OF THE

COLOURED SIDE MARK, LABEL, AND OTHER SPECIALITY CAPSULES

(For the Prevention of Fraud and Refilling of Old Labelled Bottles), as supplied to Bass & Co., and the leading Brewers and Bottlers of Wines and Spirits throughout Europe.

PLAIN ORDINARY CAPSULES,

For Small Phials, 2s. 6d. and upwards per 1,000, according to size, style, design, and quantity.

SPECIAL CONTRACTS FOR CONTINUOUS DEALING.

Manufacturers of Pure English-made Bottling and Package Tinfoil, from 1s. per lb. and upwards; Mixed Foil (Foreign Quality), from 6d. per lb. (according to gauge); Patent Barrel Packages and Snuff Canisters, &c.

MANUFACTORIES:—LONDON: Chief Office and Factories, Wharf Road, City Road, E.C.; and Holloway and Batavia Mills, Holloway, N.W.—BIRMINGHAM: Moor Green Fields.—PARIS: Office, 4 Rue Mogador, Chaussée D'Antin.—BORDEAUX: Office, 3 Quai de Chartrons; Factory, Monrépos, Floirac.

PATENTEES OF HYDRAULIC & MECHANICAL PRESSURE CAPSULING MACHINES,

ESPECIALLY ADAPTED FOR CHEMISTS' COUNTERS.

Largely in use by the Trade, and efficiency guaranteed for all sizes of Bottles, at Royalties from 5s. to £2 2s. per annum.

SUPPLEMENT TO "THE CHEMIST AND DRUGGIST."

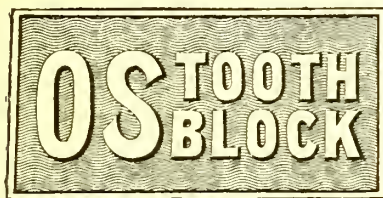
SATURDAY, JULY 17, 1886.

i

Hunyadi Janos

CAUTION.—Circumstances which have come to the knowledge of Andreas Saxlehner, Buda Pest, Sole Proprietor of the Hunyadi Janos Spring, compel him to WARN the British Public against SPURIOUS IMITATIONS. To secure genuineness, purchasers should see that every bottle has on the LABEL the name of "THE APOLLINARIS COMPANY (LIMITED), London."

THE BEST & SAFEST DENTIFRICE. **OSCAR SUTTON & CO., Preston, Lancashire.**



REGISTERED TRADE MARK.

The following Testimonial from Mr. JAMES A. REID, Chemist and Druggist, Helensburgh, we quote by special permission: "Enclosed please find cheque in payment for the Tooth Blocks. I am highly pleased with their new form and extra inducements presented through the leatherette labels and chemist's own name stamped on each block. These give one special encouragement to keep prominently before an intelligent public what UNDOUBTEDLY IS THE GREATEST DENTIFRICE OF THE AGE."

No. 0.
Loose, without Boxes.

No. 1.
In Patent Metallic Boxes,
retail 1s.

No. 2.
In Crystal Caskets,
retail 2s. 6d.

OVER 1,000 TESTIMONIALS.

HORSE, CATTLE, AND SHEEP MEDICINES.

BY ROYAL APPOINTMENT.



By Special Warrant,
Dated 27th December, 1865.

DAY, SON & HEWITT,

INVENTORS AND SOLE PROPRIETORS OF THE



By Special Warrant,
Dated 10th February, 1866.

"ORIGINAL" STOCK BREEDERS' MEDICINE CHESTS.

Containing the following Matchless Remedies for all Disorders in Horses, Cattle, Calves, Sheep, & Lambs:

THE CHEMICAL EXTRACT.

For assuaging pain and inflammation in all wounds, saddle galls, strains, bruises, and swellings in horses; for pain after calving and lambing, and for swollen udders and sore feet. ½-dozen box, 7s. 6d.

THE RED DRENCH

Celebrated for inflammatory disorders; such as fevers, pleurisy, foot-and-mouth complaint, yellows, surfeit, and red water. Also for difficult calving and lambing. 3s. 6d. and 13s. per dozen box.

THE GASEOUS FLUID.

Unmatched for colic or gripes and debility in horses, for colds, chills, shivering fits, and diarrhoea in cattle, calves, and sheep. 20s. per dozen box.

THE CARMINATIVE CHALK.

A warm stomachic in severe diarrhoea or flux, by way of change of the gaseous fluid in great irritation of the bowels. ½-dozen box, 10s.

Price of Chests, with "Guide to Farriery"—No. 1, £6/6/0; No. 2, £2/16/6; No. 4, £2/17/6 (for horses only). Carriage paid.

THE RED PASTE BALLS AND RED POWDERS.

Invaluable for ill-conditioned horses and after hard hunting and driving. For coughs, colds, staring coat, itching, swollen legs, and want of strength. The Powder is to be given in the feed. 7s. 6d. per dozen.

THE BLACK PHYSIC BALLS

Excellent for confined bowels and for worms in horses, but a bran mash should be first given. In bad cases of worms give a dose of Broncholine after the Ball. For cows and oxen, for stoppage of the bowels, give a dissolved Ball. 8s. per dozen.

THE BRONCHOLINE.

Invaluable for husk, hoarse, or cough in cattle, calves, and sheep; for tapeworms, and worms in horses. ½-dozen box, 7s. 6d.

THE GASEODYNE.

Used as lardarum in uncontrollable spasmodic pains in ewes lambing and perfectly safe. ½-dozen box, 10s. 6d.

THE ALCOHOLIC ETHER:

Used as sweet spirits of nitre in severe colds and shivering fits. ½-dozen box, 7s. 6d.

Prepared only by **DAY, SON & HEWITT, 22 DORSET STREET, LONDON, W.,**

And sold by all Wholesale Houses in London; Hood & Co., Melbourne; Kempthorne, Prosser & Co., Dunedin and Auckland; Fairthorne & Co. Launceston; Felton, Grimwade & Co., Sydney and Wellington; Dombain & Co., Christchurch.

A LIBERAL DISCOUNT TO EXPORTERS, AND ALL PARTICULARS ON APPLICATION.

CAVELL'S 3^d. GINGER-BEER POWDERS

Are in continual and great demand, which fully testifies their superiority. Better packed for Export than many of the so-called preparations. For sample and terms, which are lower than that of any other maker, apply to

JOHN CAVELL, LONG SUTTON, LINCOLNSHIRE. LONDON DEPOT: 489 OXFORD ST., W.

EVANS' SALINE.

EFFERVESCING.

This preparation is a mixture, in definite proportions, of Howard's Chlorate of Potash, English Tartaric Acid, Bicarbonate of Soda, and a little Cane Sugar. The proportion of these ingredients is fixed, and always remains the same. This, and the pleasant excess of acid, characterise Evans' Saline. A dry mobile powder, dissolving perfectly.

BOTTLES WITH CHEMISTS' OWN NAME, OR IN BULK.

FIVE NEW ARTISTIC DESIGNS FOR WRAPPERS FOR THE SEASON.

For further particulars as to price, &c., see Price List.

EVANS, SONS & CO.,
56 Hanover Street,
LIVERPOOL.

EVANS, LESCHER & WEBB,
60 Bartholomew Close,
LONDON.

T. & F. J. TAYLOR'S



AERATED WATERS,
Newport Pagnel.

ESTABLISHED 1835.

SODA, POTASH, SELTZER, AERATED (without Alkali), and LITHIA WATERS, LEMONADE AND GINGER ALE.

Each Bottle is protected by a Label bearing the Signature of the Firm.

Purity and Excellence of the Water certified by Analysis by Professor ATTFIELD, Ph.D., F.C.S.

STOWER'S LIME JUICE SYRUP & CORDIAL

Prepared from their Original Lime Juice Syrup Recipe.

PURE LEMON AND LIME JUICE, SWEETENED AND UNSWEETENED.

The advantages offered over other Makers' Cordials are—
That it contains more Lime Juice.

That it is entirely free from chemical or other acids, except the natural acid in the pure juice of the fruit.

That it is quite **FREE FROM THE MUSTY TASTE AND SMELL** which predominate in most, if not all, of the Cordials. It is guaranteed to keep, open or closed, for any length of time in any climate or temperature, and to be entirely free from Alcohol.

Any Medical Man can order a Sample Post Free and Gratia.

A. RIDDLE & CO., 38 COMMERCIAL ST., LONDON E.

THE "LONDON-MADE" SYPHON BOTTLE

(TITLE REGISTERED).

Obtained the HIGHEST AWARD at the International Health Exhibition, London, 1884.



The high reputation this bottle has achieved is due to the fact of its being in every particular the most perfect yet introduced; and when compared with others in the market it stands pre-eminent. It is most simple in its working parts, therefore the least liable to get out of order; it is the most easily opened, the lightest pressure on the handle being sufficient; it produces a more highly-charged gaseous water than is usually obtained from siphons; it compares most favourably in appearance with any, and, the metal top being entirely free from lead, the prejudice against siphon drinks is at once removed, as the liquid passes over pure tin only.

All our Syphons are now fitted at the base with a groove, so that drips from the spout that run down the sides are prevented from soiling the table. See drawing.

NOTE.—Syphons made with our patent foot for collecting excess of liquid dripping from the spout after use are supplied at no extra charge, and will be found of great utility in preventing stains, &c., upon table linen. This is a desideratum long been wanting, particularly for private-house use. Send for sample; forwarded upon receipt of 2s.

Any name, crest, or trade-mark put on the glass by an improved acid process, at from 18s. to 24s. per gross. There is a three-fold advantage in this, as it forms a continual advertisement, is a great ornament, and a preventive of fraud. The plate for engraving costs extra from 5s. upwards, according to the artist's device required.

PRICES (WHITE, BLUE, GREEN, OR AMBER):—

	By the gross,	per doz.	Less than 1 gross,	per doz.
Quart size	£1 2 0	—	—	—
Pint size	—	—	—	—
Half-pint, Pear shape	1 1 0	—	—	1 3 0
Octagonal vases, any colour (including Azure Blue)	1 0 0	—	—	1 2 0
	—	—	—	—
	1 4 0	—	—	1 6 0

Tops, nickel-plated, from 5s. 6d. per doz. extra. Tops, silver-plated and burnished from 9s. per doz. extra. A charge is made for packing, except when ordered in our patent hirt cases (holding one dozen each, price 2s. 6d. each).

Please Note.—B. & F. are the only firm manufacturing Syphons in England that do not supply them filled, and so compete with their customers' trade.

BARNETT & FOSTER,

MINERAL WATER ENGINEERS,

Manufacturing Chemists, and General Providers for the Aerated Water Wine, Beer, and Cyder Trades,

"Niagara Works," 26th Eagle Wharf Road, London, N.

Send for Price List of Soda-water Machinery and Accessories.

TOWER TEA

A SAFE and PROFITABLE addition to a Chemist's Business.



For retail at

The London Broken Tea ... 1/8

The London Two Shilling Tea... 2/-

The London 2/8 Assam Tea... 2/8

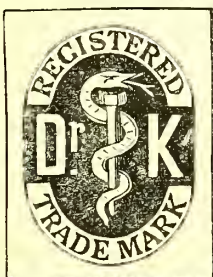
For Testimonials and References see the full page Advertisement which appears monthly in this Journal. Last insertion June 26, page v.

**THE GREAT TOWER STREET TEA CO., LIMITED,
LONDON.**

12½ gals. for £1, Cash free.
SPECIAL LINES FOR CASH BUYERS!!

TYRER'S
WORCESTER SAUCE,
YORKSHIRE SAUCE,
"BOROUGH" KETCHUP.
BEST VALUE THAT MONEY CAN PURCHASE.

Prices and Samples sent free of all cost by
PETER TYRER, The "Borough" Ketchup & Sauce Maker,
LONDON, S.E.



DR. KOCH'S MEAT PEPTONE

DIPLOME D'HONNEUR ANTWERP EXHIBITION, 1885.

The most Assimilable and Nutritious Extract of Meat yet offered to the public.
Materially Cheaper and Superior to all similar Preparations,

Containing all the nutritious constituents, including the Albumen, of Fresh Meat Peptonised, i.e., so prepared that it is instantly assimilated without requiring the process of digestion. Invaluable to Invalids and persons of weak or impaired digestion, and in all cases of Dyspepsia, Poorness of Blood, Debility, &c.

In Extract of Meat form : in pots of 31 oz. (retail, 2/-) ... 1/6 each | In Dry Form : Tablets in envelopes of about 7 oz. ... (retail, 4/-) ... 3/ each
" " " 8 oz. (" 4/-) ... 3/ " | " " " Lozenges in boxes [the most sustaining
" " " in tins of 33 oz. (" 14/6) ... 11/6 " | " " " nourishment in the smallest possible compass] " 1/-) ... -/9 ..

Sole Wholesale Depot for Great Britain—BURGOYNE, BURBIDGES & CO., 16 Coleman Street, London, E.C.
Who will be glad to forward Samples, Pamphlets, &c., upon application.

DRUGS, CHEMICALS, PHARMACEUTICAL PREPARATIONS.

SPECIALITIES :

Concentrated Infusions
Fluid Extracts

Insufflated Juices
Concentrated Liquors
Solid Extracts

Decoctions
Composition Essence
Botanic Extracts

Vegetable Colours
Fruit Essences

Soluble Essences of Lemon, Orange, Ginger, &c., &c., for the Aërated Water Trade.

IMPERIAL BOUQUET, a very choice and lasting perfume, price 8s. 6d. per lb. ; 8s. in Wr. Qts.

Vegetable Butter Colouring

(AS DANISH).

This preparation is superferding Annatto, Carrots, and all other colorants, and where once tried is always used.

PRICES—

Bulk, 1s. 2d. per lb., 5 per cent. discount. ; Bottles, 4s., 8s., 16s. per dozen, 10 per cent. discount.

SPECIAL QUOTATIONS TO LARGE BUYERS.

OLDFIELD, PATTINSON & COMPY.,

Wholesale Druggists & Manufacturing Chemists,

17 TODD STREET, MANCHESTER.

IMPORTANT TO VISITORS FROM INDIA AND THE COLONIES.

We have just issued a **COMPLETE CATALOGUE OF DRUGGISTS' SUNDRIES**, containing many Saleable Novelties. **1,000 Illustrations.** We will Mail it to any part of the World on receipt of Business Card.

SPECIALITIES.

Adhesive Plaster, in 6d. Tins.	Cold Cream, Pots (flat series).	Glycerine Soap.	Pill Ccaters.
Areca-nut Tooth Paste.	Corn Rubbers.	Gutta Percha Tooth Stopping.	Plasters (Porous, &c.)
Beetle Powder.	Ear Syringes.	Higginson's Enemas.	Prometheans.
Benzine (Perfumed).	Electro Magnetic Apparatus.	Hair Wash Powder.	Respirators.
Cachou Lozenges.	Feeding Bottles, "The Pet" (in 22 patterns).	Inhalers.	Smelling Bottles.
Carded Goods (a large variety).	Floating Lights (Tin).	Insect Powder.	Sponges (Carded).
Cement (Chinese and Holdfast).	Fly Paper.	Japanese Curl Papers.	Spray Producers.
Cherry Tooth Paste.	Fuller's Earth Powder.	„ Medicated Paper.	Teething Pads.
Chest Protectors.	Glycerine Jelly.	Mustard Leaves.	Thermometers.
		Nursery Lamps.	Vagina Syringes.
		Parchment Paper.	Violet Powders.
			Wafer Paper.

BOURNE, JOHNSON & LATIMER,
WHOLESALE AND EXPORT DRUGGISTS' SUNDRIESMEN,
34 & 35 FURNIVAL STREET, LONDON, E.C.

ALEXANDER & JOHN SHAW,
GRANTHAM, ENGLAND,

MANUFACTURERS OF THE WELL-KNOWN

CHAMOIS LEATHER,
PLASTER SKINS, AND WHITE SPLITS FOR PERFUMERY CAPPING.

These Goods are of the choicest quality, and specially prepared for the Drug Trade.

JAMES'S TOILET SPECIALITIES.

JAMES'S HERBAL OINTMENT, for the Cure of Pimples, Black Specks, Blotches, &c., and taking away Tan Freckles, Sunburn, &c. Sold by all Chemists, 1/1½ and 2/9 per box.

JAMES'S DEPILATORY,

For the instant removal of Superfluous Hair. Sold by all Chemists, 1/- and 2/- per box.

JAMES'S HERBAL POMADE,

For Promoting the Growth of the Hair, Whiskers, Beard, Moustachios, Eyebrows, and Eyelashes. Sold by all Chemists, 1/- and 2/- per box.

These Articles are well worthy the attention of Chemists, Wholesale Houses, and others, as they are being well advertised.

JAMES & CO., 268 (late 226) Caledonian Rd., London, N.

Pattison's
Bath
Gloves

30
VARIETIES
AT FROM
2/-
PER DOZEN PAIRS.

Lists on application.

ORIGINAL MANUFACTURER, [11]
GEORGE PATTISON, 139 St. John St. Road, LONDON, E.C.

Telephone Number,
1852.

Advertisers' & Buyers' Reference List, AND INDEX TO ADVERTISEMENTS.

TELEGRAPHIC ADDRESS—
CHEMDRUG
LONDON.

ADVERTISEMENTS APPEARING IN THIS ISSUE OF "THE CHEMIST AND DRUGGIST."

Please note that to satisfy Post Office requirements the Advertisements are paged twice—once in Arabic, once in Roman numerals.

A 1 BRAND MENTHOL CONES

ALLEN & HANBURY'S Manufacturing Pharmacists and Export Druggists COVER
APOLLINARIS CO., *Les Eaux de Vichy, France* 1
Water, Friedland Water xi TEXT 60
ASSISTANTS WANTED AND WANTING SITUATIONS Coloured Supplement
AUSTRALIAN DRUG CO. xvii

BAILEY, W. H., & CO. Drug Mills 8
BAISS BROS. & CO. Wholesale Druggists xii
BARNETT & FOSTER

The London-made Syphon Bottle ii
BATTLE & CO. Bromidia 17
BENTLEY & SON Medicine Chests 7
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BOWLING & GOVIER Shop Fitters 5
BRATBY & HINCILLIFFE, Soda Water Plant, &c. 12
BRISTOL WEST OF ENGLAND HOMEO-PATHIC SUPPLY 22
BRITISH HOP PACKING CO. Hops 22
BURGOYNE, BURBIDGES & CO.

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CADURY BROS. Cocoa Essence COVER
CAVELL, J. Ginger Beer Powders 1
CHRISTY, T. & CO. Menthol 11
CLARKE, S. Night Lights 9
COCKING & CO.

Japan Agents, Peppermint Oil, Menthol 14
COLEMAN & CO.
CURTIS & SONS Liebig's Extract of Meat and Malt Wine 10
Shop Fitters 4

DAY, SON & HEWITT Veterinary Medicine Chests 1
DE LUCA, G. V. Screw Pots and Bottles, Tuscan Olive Oil 20
DE PASS, E. A., & CO. Petrolina 14
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DUNCAN, FLOCKHART & CO.

Chloroform, Ink, &c. xv
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GUTHMANN, ERNEST Lavette's Rheumatic Cure 20

HALLER & CO. Lanoline x
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HAYWOOD, J. H. Surgical Appliances 18

HEARON, SQUIRE & FRANCIS Terebene TEXT 60

HERTZ & COLLINGWOOD
HODGE & CO. Improved Press 20
HOLLWAY, PROFESSOR. Pills and Gout 20
HOOPER & CO. Water Bed (COVER) 15
HOP BITTERS CO. Caution 15
HORSFORD'S ACID PHOSPHATE xvi
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Quinine and Pharmaceutical Chemicals xiii
HOWLETT, S. Shop Fitter 5
HUNYADI JANOS Waters 1
HUTCHINSON, A., & CO. Manufacturers of India-rubber Goods 19

IMMISCH, M. Metallic Thermometers 2
INGRAM & ROYLE
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JAMES & CO. Hair Preparations iv
JAMIESON & CO. Harness Composition, Dublin, Ink, &c. 8
JENSENS, S. Cod Liver Oil, "Iceberg Brand" xv
JENSEN, DR. CARL L. Pallas Syringe, Peptones, and Crystal Peptone 13
JEWELRY & BROWN Tooth Paste 11
JONES, DR. G. H. New Pamphlet 17
JUDSON & SON (LIM.) Filtering Medium 7
" Glass Filters x
" Specialities Dyes, Gold Paints 8

KEITH, B., & CO. American Concentrated Medicines 11
KEMP, W., & SON Ginger Beer Powders xi
KEMPTHORNE, PROSSER & CO. Druggists in New Zealand xvi
KENDAL, J. H. Tonic Bitters 17
KILNEE BROS. Feeding and Dispensing Bottles 20

LALOR, DR. Phosphodyne 14
LEMAITRE & CO. Shop Fitters 5
LENNON, B. G., & CO. Druggists, Cape Colony xviii
LEVERMORE, AUG., & CO. Pure Precipitated Chalk 17
LINDNER, M. India-rubber Stamps, &c. 17
LONDON HOMEOPATHIC HOSPITAL 2
LYNCH & CO. Enemas COVER

MACFARLAN, J. F., & CO. Morphia, Chloroform, &c. 16
MACNAUGHTAN, F. J. Commission Agent Coloured Supplement
MANCHESTER COLLEGE OF PHARMACY 2
MAUBERT'S SOAPS 6
MAW, SON & THOMPSON
Insecticide Fluid, ix; Prices Current 1
MAY & BAKER Pharmaceutical Chemicals, Camphor, Tablets, Mercaptans, Ethers, &c. COVER
MAY, ROBERTS & CO. Seltzogenes 12
MISCELLANEOUS Coloured Supplement
METCALF, THEODORE & CO. Coca Wine xviii
MORGAN CRUCIBLE CO. Assay Furnaces 17
MUMFORD, G. S. Linseed, Starch, Fuller's Earth TEXT 50
MURPHY, J. Marking Ink 11
MURRAY, SIR JAMES Fluid Magnesia, Fluid Camphor 16

NATIONAL CHEMICAL CO. Chloride of Lime viii
NEWBERRY & SONS Warner's Pills and Vases vii
NEWSOME, C. Lint 18
NEWTON & CO. Photographic Apparatus and Chemicals viii

NOAKES, B., & CO. Metallic Casks, Drums, Keas, Canisters, Boxes, &c. 8
OLDFIELD, PATTISON & CO. Drugs, Chemicals, & Vegetable Butter Colouring iii
ORRIDGE & CO. Vegetable Agents Coloured Sup.
OSCAR SUTTON & CO. OS Tooth Block 1

PARCHMENT, THE, AND WAX PAPER CO. 6
PATENT PLUMBAGO CRUCIBLES 17
PATTISON, G. Bath Gloves iv
PETERSON & CO. Sponge 7
POWELL & BARSTOW Elastic Gum Surgical Instruments 17
PROSSER, E., & CO. Druggists' Sundries xvii

RIDDLE, A., & CO. Sower's Lime Juice Syrup and Cordial ii, 17
ROBINSON, B. Orange Wines 22
ROBINSON & SON Lint 19
ROCKE, TOMESITT & CO. Druggists, Melbourne xviii
ROUSE & CO. Matthews Fuller's Earth ii
RUMFORD CHEMICAL WORKS Horsford's Acid Phosphates xxi

SAINSBURY, S. Lavender Water 17
SANGER & SONS Prices Current, &c. x
SCOTT, W. A. Surgical Instruments, &c. 19
SEABURY & JOHNSON Surgical Plasters, &c. 23
SHARLAND & CO. Wholesale Druggists 17
SHAW, A. & J. Chamomile Leather iv
SHIRLEY, J. G. Menthol Cones, &c. viii
SILICA-CATED CARBON FILTER CO. Filters 24
SIMCOCK, J. S. Feeding Bottles, Sundries 15
SMITH, T. & H. Morphia, Chloroform, Chemicals, &c. xiv
SOUTHALL BROTHERS & BARCLAY Sea Salt xv
STEARNS, F., & CO. Non-secret Medicines xviii
STEELE, JOHN C., & CO. Chloride of Lime ix
STEFAN & CO. Enamelled Letters 2
STOWER'S LIME AND LEMON JUICE ii, 17
STURROCK & SONS Toilet Specialities 11
SUMNER, R., & CO. Wholesale and Export Druggists COVER
SYMES & CO. (Simla) Thibet Musk 6

TAYLOR, E. Plasters 18
TAYLOR, T. & F. J. Aerated Waters 11
THE ANTI-SMOKER Photography viii
THOMAS, R. W., & CO. Photography viii
THOMPSON & CAPPER Homoeopathic, Medicines and Dentifrice Water 22
TODD, ALBERT M. Menthol Crystals xvii
TOMLINSON, R., & SONS Shop Fitters 4
TOOGOOD, W. New Premises, Specialities, &c. xiv, 21
TOWNSEND, J. Handbills and Labels 6
TREBLE, GEO., & SON Shop Fitters 7
TULLY, J. M. Postal Teaching 2
TYRER, P. Doro's Ketchup iii

WALL, G. C. Wax Paper 6
WESTMINSTER COLLEGE "Universal Postal System" 2
WHEELER'S GLYCERINE JELLY 11
WHITEHEAD & CO. Bottles 20
WOOLLEY, SONS & CO. Manufacturing Pharmaceutical Chemists xii
WYLEYS & CO. Wholesale Druggists, Chemicals, &c. 16
YARDLEY & CO. Choice Toilet Soaps 17
YATES, W. S. Shop Fitter 7

CLASSIFIED LIST OF ALL ADVERTISERS

Whose Announcements appear in "THE CHEMIST AND DRUGGIST." Those whose Names do not appear above are published in one of the other issues of this month.

AERATED AND MINERAL WTS AND PLANT

(See SYPHONS and ESSENCES.)

Apollinaris (Hunyadi Fried- richshall, and Apollinaris) Barnett and Foster
Bratby and Hinchcliffe
British Syphon Co.
Bush, W. J., and Co. (Foam Producer, &c.)
Chemists' Aerated Waters Association
Ellis (Ruthin)
Favarger, H.
Gerant and Co.
Guérin Frères
Harston & Co.
Hassall and Co. (Citric Acid, Phospho)

Aerated & Mineral Wts & Plant—cont.

Hooper and Co. (Brighton Seltzer)
Ingram and Royle (Mineral and Vichy)
Jewsbury and Brown
La Bourboule
Meadowcroft, W.
Mills and Co. (Bourne)
Schacht, W., and Co. (Kronen- quelle)
Schweiger and Co.
Stevenson and Howell
Taylor, T., and F. J.
Tyler, Hayward, and Co.
Vallet, L. (Bottles)
Younger and Ridley (Temper- ance Wines)

ALOIN

Smith, T., and H., and Co.

ACETIC ACID

Dunn and Co.
Hirst, Brooke and Hirst
Lindsey, C. R., and Co.

ALKALOIDS

Howards and Sons (Cinchona) Smith, J. and H.

AMMONIA

May and Baker
Hirst, Brooke and Hirst

APPARATUS

Follows and Bate, Lim.
May, Roberts (Water-bath)
Morgan Crucible Co.
Orme (Scientific)
Pat. Plumbago Co.
Rothermel, Paul (Vinegar)
Wolters Otto (Balances)

AGENCIES

ABROAD

Campbell, Neil S. (Colombo)
Cocking (Japan)
Davison, A. (delphia)
Elmer and Mendelson (Phila- Evans, Sons and Mason (Canada)
Felton (Melbourne)
Fougera (New York)
Hornusjee Ruttonjee (Bombay)
Kempthorne (New Zealand)
Lennon (Port Elizabeth)
Mayhew, E. (Warr. Australia)
Phillips and Co. (Bombay)
Prosser, E., and Co. (Sdney)
Roberts (Paris, &c.)
Rocke (Melbourne)
Sharland & Co. (Auckland N.Z.)
Shirreffs and Co. (Allahabad)
Symes and Co. (Simla)

BANDAGES

Bailey and Son
Bole Hall Mill Co.
Gibbs, Cuxson, and Co.
Hutchinson, A., and Co. ("Heft- Liverpool Lint Co. band")
Powell and Barstow
Robinson and Sons
Seabury and Johnson

BANK

Birkbeck Bank

BEDS, WATER

Hooper and Co.
Hutchinson, A., and Co. (Sheet- ing Rubber)

BEESEW & HONEY

Kemp, W., and Son

BATH GLOVES

Pattison, G.

BICARB. SODA

Brunner, Mond and Co.
Gaskell, Deacon and Co.
Howards and Sons
May and Baker

BISMUTH PREP.

Howards and Sons
May and Baker

BOOKS

Dobell, Dr. (Bournemouth)
James, Dr. Prosser (Guide to
New B.P.)
Smith, J. G. ("Aerid Wtrs")

BOTTLES

Ayrton and Saunders
Barnett and Foster (the
"Eclipse" Stopped)
Brooks, Peel (Perfumers)
De Luca, G. V.
Glasgow Apothecaries' Co.
Harris and Co.
Hearn, Riddle
Isaacs, I., and Co.
Kilner Bros.
Potts
Simcock, T.
Simcock, W.
Thompson, Millard and Co.
Toogood (Feeding)
Vallet

BOXES

Arundel (Folding Card)
Austin and Co. (Cardboard)
Ayrton and Saunders (Willow)
Banks and Ratcliffe (Soaps, &c.)
Bethell, Thomas P. (Folding)
Estes' Turned Wood
Metz, Paul (Pine and Willow)
Noakes, B., and Co.
Robinson and Sons (Cardboard)
Rogers, J., and Co.
Self-Opening Tin Box Co.
Thompson Norris Manufg. Co.

BROMIDIA

Battle and Co.

BRUSHES

Ashworth (Metallic)
Dukas and Co.
Gérard, A. (Toilet)
Lynch and Co. (Electric)
Titterton & Howard

BUTTER COLOUR

Bunsen, Benson and Co.
Bush, W., Son, and Co. (Mari-
goldine)
Meyer and Henckel
Oldfield, Pattinson and Co.

CAMPBOR

Howards and Sons (pathic)
Keene and Ashwell (Homo-
may and Baker
Murray, Sir James (Fluid)

CAPSULES

Betts and Co. (Metallic)
Chevalier (Solubles)
Denoual, J. (Medicinal)
Hooper, B., and Co.

CARMINE

Sellers

CATALOGUES

Bourne, Johnson, and Latimer
Newbery and Sons
Quarterly Price Current (Maw's)

CEMENT

Foulkes
Kay (Coaguline)

CHALK PRECIP.

Dunn and Co.
Levermore and Co.

CHEMICALS

Bramwell, E., and Son
Brauner, Mond and Co. (Bicar-
bonate of Soda)
Bush, W., and Co.
Dunn and Co.
Gaskell, Deacon and Co. (Bi-
carbonate of Soda)
Howards and Sons (Pharma-
ceutical)
May and Baker
Oldfield, Pattinson and Co.
Smith, T., and H.
Sumner, R., and Co.
Sutton and Co. (Volumetric
Analysis)
Type and King
Walker, Troke and Co.
Zimmermann, A. and M.

CHLOROFORM, &c.

Duncan, Flockhart
Macfarlan, J. F.
Smith, T., and H.
Zimmermann

CHLORODYNE

Bage, T., Blyton and Co.
Davenport (Browne's)
Freeman
Towle, A. P.

COCAINE

Howards and Sons

COCOA & CHOCOLTE

Cadbury Bros.
Fry (Malted)
Richards, J. M. (De lae's)

COFFEE

George and Welch (Dandelion)
Symington (Various Essences)

CORRUPT PAPER

Thompson Norris Manufg. Co.

COD-LIVER OIL

Allen and Hainburys
Baiss Bros.
Blesley, J. E., and Sons (Iodine)
Hooper, B., and Co.
Jensen's "Iceberg Brand"
Smith, T. J.
Southall Bros. and Barclay (A.I.)

CMPSRSD MDCNS

Drysdale and Co. (Leo's Chlo.
Potash)
Hooper, B., and Co.
Newbery, F., and Sons

CORN CURES

Chave and Jackson (Celandine)
Harvey's Pencils (Hockin,
Wilson and Co.)
Robinson, B.
Young's

CRUCIBLES

Morgan Crucible Co.
Pat. Plumbago Co.

DOG MEDICINES

Spratts (Patent) ("Fibrine")

DENTIFRICES

Beldard, J.
Jewsbury and Brown
Martin, J. W. (Rozalium)
Rimmel
Sutton, O., and Co.
Thompson and Capper
Woods, W. (Areca Nut)

DENTISTRY

Buck, F. (Lessons)
Jones, Dr. C. H. (Mechanical)

DISINFECTANTS

Dinsdale, J. T.
Government Sanitary Co.
Harrison and Co. (Hydroleine)
Harrison and Co. (Carbolica)
National Chemical Co.
New Carbolie Sanitary Co.
Rimmel
Sanitas
Steele & Co. (Chloride of Lime)
Vogt, G.
Wylcys and Co. (Pure Terebene)

DRUGGISTS' SUP.

Ayrton and Saunders
Baiss Bros.
Bourne, Johnson
Evans, Lescher and Webb
Hockin, Wilson and Co.
Lairitz (Fine Wool)
Lynch and Co.
Maw, S., Son and Thompson
May, Roberts and Co.
Newbery, F., and Sons
Schulze and Co.
Simcock, W.
Thompson, Millard
Toogood

DRUG MILLS

Bailey & Co.
Follows and Bate [(Entrprs.)
Werner and Pfeiderer

DUBBIN

Dales, J. T.
Jamieson and Co.

DUTCH MEDCNS.

Bieber, J. D.

DYES

Ayrton and Saunders

EAU DE COLOGNE

Farina, J. M. (Gegenther)

ELECTRIC APPAR

Darton, F., and Co.
Orme and Co.

ENEMAS

Ingram and Son
Lynch and Co.
Schulze and Co.

ENGRAVERS

Barker, W., and Son

ESSENTIAL OILS

Bush, W., Son and Co. (Imprs.)
Bush, W. J. (Lemons, &c.)
Clay, Dod & Co.
Cocking (Japan Peppermt)
Jaksou, J., & Co. (Peppermt. &c.)
May and Baker
Rocke, Tompitt (Eucalyptus)
Sutton and Co.
Stevenson and Howell
Todd (Am. Peppermt)
Vogt, G.
Wright, Layman and Umney

ESSENCES, FRUIT**AND SOLUBLE**

Bush, W. J., and Co.
Hay's Soluble Lemon, &c.
Jakson, J., and Co.
May and Baker
Meadowcroft, W.
Rudlaue's Ess. of Pines
Stevenson and Howell
Sumner and Co. (Ginger Ale)
Sutton, Francis and Co. (Stan-
dard Solutions)
Type and King (Pear and
Pineapple)

ETHER

Duncan, Flockhart and Co.
Howards and Sons [(Chloric)
May and Baker
Robbins

FORMULE

Brooks, T.

EXTRACT, MEAT

Brand and Co.
Burgoyne, Burdidges and Co.
(Dr. Koels)
Coleman & Co.
Edge Bros., Lim.
Hugo, Brown and Co.
Liebig Co.
Masou, Geo., and Co.
Poths (Leube Rosenthal)

EXTRACTS, FLUID

Baiss Bros.
Barber, G., and Co.
Burgoyne, Burdidges
Harker, Starg
Howards and Sons
Stearns, F., and Co.
Thompson, Henry Ayscough,
and Son

FACE POWDERS

Chubb, J., and Co. (Violet)
Foulkes

FEEDING BOTTS.

Bourne, Johnson and Co.
Hearn, Riddell and Co.
Kilner Bros.
Lang, J., and J.
May, Roberts and Co.
Richards, Charles (Tube
Cleaner)
Simcock, T.
Thompson, Millard and Co.

FILTERING

Doulton and Co.
Judson, D., and Son
Maignen (Filter Rapide)
Mawson and Swan
Schwenker, E., and Co. (Paper)
Silicated Carb. Filtr Co.
The Chamberland-Pasteur
Filter

FOOD, INFANTS'**AND INVALIDS**

Clarke, S. (Food Warmers)
Jensen (Peptone)
Nestle, H.
Savory and Moore (Pancreatic)
Southall Bros. and Barclay
(Prepared Malt)
Van Abbott (Diabetic)

FULLER'S EARTH

Chubb, J., and Co.

Hynam, J.
Rouse and Co.

FUNNELS

Lynch and Co.

GINGER ALE

Bingley, J.
Kimmond
Mills, R. M.
Ross and Co.
Schweppe (Dry)
Sumner, R., and Co.

GINGER - BEER**POWDERS**

Cavell, J.
Kemp and Son

GLYCERINS

Fink
Price's Candle Co.

GRANULAR PREP.

Allen and Hainburys
Bishop, A.
Bush, W., and Co.
Goodall, Backhouse and Co.
Harker, Starg and Moss
Stearns, F., and Co.

GRINDING MCNS

Bracher and Co.
Follows and Bate
Werner and Pfeiderer

GUMS

Fluk (Arabic, &c.)

GUTTAPECHA

Duncan, Flockhart
Stevens, P. A. (White)

HAIR PREP.

Ayrton and Saunders
Bates, T. W. (Frizzetta)
Chesbrough Mfrg. Co.
James and Co. (Herbl. Pom.)
Rimmel
Sturrock's Oleagua
Comairine
Towle Toilet Cream (Thorn-
ton's)

HARNES POLISH

Jamieson and Co.

HERBALISTS

Butler, McCulloch
Potter and Clarke

HOMOEOPATHIC

Bristol and W. of England
Epps, James, and Co.
Gilbert, W.
Gould, E., and Son
Keene and Ashwell
Leath and Ross
Thompson and Capper

HOPS

British Hop Packing Co.

HOSPITALS

London Homoeopathic

ICE

Barnett and Foster

INK

[See MARKING.]

Antoine
Bewley and Draper
Clarke, J. T.
Duncan, Flockhart
Jamieson and Co.

INSECTICIDES

Ford, Shapland & Co. (Fly Papers)
Galzy, E.
Judson and Son, Lim.
Maw, S., Son, & Thompson
(Insecticide-Vient)
Radlauer (Moth Paper)
Sandford
Sumner, R., and Co.
Vogt, G.
Woolley & Son (Dalmatian pdr)

KETCHUP

Tyrer, P.

LABELS

Blake and Mackenzie
Bowers Bros.
Ford, Shapland and Co.
Townsend (Exeter)

LANOLINE

Haller and Co.

LARD

Even, J.

LEATHER

Shaw, Alexander and John

LEECHES

Butler, McCulloch
Fitch and Nottingham
Potter and Clark

LICORICE

Craven, M. A., and Son

LIME JUICE

Felton and Sons (Specialit)
Montberratt (see Evans)
Middle and Co. (Stowers)
Ross and Co.

LINSEED

Kemp, W., and Sons

LINT

Liverpool Lint Co.
Newsome (Surgeons)
Robinson and Sons
Seabury and Johnson

LOOFARS

Lynch and Co.
Maw, Son and Thompson
Toogood

LOZENGES

Blyton, T. Bage, and Co. (Me-
dicated)
Craven, M. A., and Son
Gibson, R. (Manufacturer)
Knobold's Argent

MAGNESIA

Dinneford (Fluid)
Murray, Sir James (Fluid)
Southall Bros. (Liquor)

MALT EXT., ETC.

Poths (Dr. Jinek's)

MARKING INKS

Barber, G., and Co. (Crimson)
Christian, G.
Clarke, J. T.
Murphy, J.

MATERIA**MEDICA CABINTS**

Evans, Sons and Co.
Evans, Lescher and Webb

MENTHOL

A. Menthol Depot, J. G.
Shirley, Proprietor
Boehm, J. (Charms)
Christy and Co. (Cones)
Cocking and Co.
Hockin, Wilson & Co.
Metz, F. ("Acme" cones)
Todd, A. M.

MERCURIALS

Bush, W., and Co.
Howards and Sons
May and Baker

METALLIC CASKS,**DRUMS, & KEGS**

Noakes, B., and Co.

METHYLATED**SPIRITS**

Burrough, J.
Gibb, I., Smith and Co.
Harvey, J., and W.
McNair and Co.
Phillips G., and Co.

MIXING

Bracher and Co.
Follows and Bate
Sherwin, G. E.
Werner and Pfeiderer

MORPHIA

Macfarlan and Co.
Smith, T. and H.
Wink, J. A., and Co.

MUSE

Symes and Co. (Thibet)

MUSTARD

Finch, Rickman
Johnson, J. H. and S. (Ess. Oil)

MUSTARD LEAVS.

Metz, Paul

NIGHT LIGHTS

Clarke, S.

OILS, PAINTS, &c.

Binghampton Oil Refining Co.
Elvin Bros.
Farmiloe, Geo., and Sons
Follows and Bate (Mill)
Joff, A., and Co.
Joyce, S. C., and Co. (Petroleum, &c.)
Peace, J. R., and Co.

OINTMENT BASES

Boehm, Gus. (Petroleum Jelly,
Chesbrough (Vaseline)
De Pass, E. A., & Co. (Petrolina)
Evans, Sons & Co. (Fossiline)
Grindley (Petroleum Jelly)
Haller and Co. (Lanoline)
Metalf & Co. (Pure Wool Fat)
Saunders, C.

PAPAIN

Christy, T., and Co. (Papaine-
Christy)
Kühn, B. (Papain-Finkler)

PAPER (Sanitary)

Mason & Co. (Waxed & Oiled)
Sanitary Paper Co.

PARALDEHYDE

Zimmermann, A. and M.

PATENT MEDCNS

Atkinson (Infant Preserv)
Barclay and Sons (General)
Beecham (Pills)
British College (Morrison's)
Burgess, E. (Lion Ointmt)
Davenport (Chlorodyne)
Edwards and Son
Fennings (Powders)
Freeman, R. (Chlorodyne)
George and Welch (Liver)
Henry's Indian Remedies
Holloway (Pills and Oint.)
Hop Bitters
Horford (Acid Phosphate)
Howell (Golden Herb Pills)
Kay Bros.
King, Alf. (Hop Bitters)
Lairitz's Pine Wool
Lalor (Phosphodyne, &c.)
Lincoln (Clarke's Mix.)
Lenroyd, E. B. (Koi Kur)
Munday, J. (Injection Day)
Newbery and Sons
Richards, J. M. (American, &c.)
Roberts (Fountain)
Sanger and Sons
St. Dalmis (Bronchial, &c.)
Smith (Antibilious Pills)
Spratts (Lecurum Oil)
Stearns' Non-secret
Stedman (Teething Powders)
Sumner and Co. (Angel's Food)
Thompson, Millard and Co.

PENS

Gillott

PERFUMERY, &c.

[See EAU DE COLOGNE.]
Barclay and Sons
Boehm Gustav (Various)
Briedenbach, Smelling Salts
(Inexhaustible)
Chesbrough Manufacturing Co.
De Pass & Co. (Pch. Blant, Sp.)
Ewen (Soaps)
Houbigant (Perfume)
Jackson, J., and Co. (Lavender)
Mann, C. A.
Mousson & Co. (Toilet Soap, &c.)
Newbery
Pears, A., and F., Soap
Rimmel, E. (Specialities)
Rowland and Son (Various)
Sainsbury, S. (Lav. Water)
Shirley, Proprietor
Watt (Per-
fumery Capping)
West, T. (Okell's Mona)
Woolley, Sons and Co. (Powder)
Yardley and Co.

PEPSINE, &c.

Bullock and Co.
Burroughs, Wellcome
Jensen, C. L.
Keene and Ashwell
Savory and Moore (Pancreatic
Emulsion, Peptonised Milk)
Warner and Co. (Ingluvim)
Zimmermann

PEPPERMINT OIL

Cocking (Japan)
Jackson, J., and Co.
Todd, Albert M.

PEPMT CRYSTALS

Todd, Albert M.

PEROX. OF HYDR.

Dunn and Co.
Robbins

PHOTOGRAPHIC

Houghton, G., and Sons
May and Baker
Newton and Co.
Sellers, J. (Carmine Pur.)

P

PHARMACEUTICAL PREPARATIONS

Allen and Hanbury
Baiss Bros.
Barron, Squire and Co.
Battle and Co. (Bromidia)
Burgoyne, Burbridge and Co.
Chevalier, F. (Solubles)
Clay, Dod and Co.
Duncan, Flockhart
Fellows (Hypophosphites)
Fletcher, Fletcher, and Stevenson
Gibson, R. (Lozenges)
Harker, Stagz (Various)
Hewlett and Sons
Hirst, Brooke and Hirst
Howards and Sons
Kay Bros.
Keith (Conc. Tinctures)
Martindale (Nitroglycerine)
Stearns (Non-secret)
Wink, J. A., and Co.
Woolley, Sons
Wright, Layman and Umney
Wyleys (Various)

PHOTOGRAPHIC CHEMICALS, &c.

Thomas, R. W., and Co.

PIG POWDERS

Spong

PITCH

Elvin Bros. (Tar)
Peace, J. R., and Co

PLASTERS

Gibbs, Cuxon and Co.
Mether, W.
St. Dalmas, A. De
Seabury and Johnson
Taylor, E.
The Pelig White Proprietary Co.

PODOPHYLLIN, &c.

Keith, B., and Co.
Smith, T. and H.

POLISHING

Baumgartner (La Brillantline)
Bradley, Bourdas (Albatum)
Oakley, John, and Sons
Pickering and Sons
Seeger, H. (Pomatum)

PORCELAIN GDS

Bentley (Opal Glass)
Potter, H., and Co.
Toogood (C.c. Pots, regist)

PORTBLE FURNCS

Morgan Crucible Co., The

PRINTING

Blake and Mc Kenzie
Ford, Shapland and Co.
Townsend, J.

QUININE SALTS

Howards and Sons
Zimmermann

RUBBER GOODS

Hutchinson, A., and Co.

SALICINE

Macfarlan and Co

SALINES

Allen and Hanbury
Evans, Lescher and Webb
Evans, Sons and Co
Harker, Stagz and Moss

SALT

Hassall, Thos. (Bay)

SANTONINE

Bieber, J. D.

SAUCES

Goodall (Yorkshire Relish)
Lazenby (Harvey's)
Tyrer

SCHOOLS

Central School
Edinburgh Glasses
Liverpool School
London Homoeopathic
Manchester College
South London School
The School of Pharmacy
Tully, J.
Westminster College

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SEIDLITZ PWDRS.

Chubb, J., and Co.
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SELTZOGENES

British Syphon Mfg Co

Durafort

Gerat and Co.

Gueret Frères

May, Roberts

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Cresswell & Co.
Dukas and Co.
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Schutze and Co. (Bags)

STAMPS

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Jensen, C., and Co. (Pallas Springs)
Lynch and Co.
Manson and Schramm (Elastic Gum)
Marks, A. A. (Artificial Limbs)
Maw, Son and Thompson
Powell and Barstow (Elastic Gum Instruments)
Schutze, F., and Co.
Scott, W. A. (Instrnts, etc.)
Seabury and Johnson (Tissues)
Stephenson and Travis
Thompson, Millard

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Critchley (Gloss)
Harrop's Glaze

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Austin and Co. (Sprinklers)
Brooks, Peel (Sprinklers)
Vallet

SUGAR

Gibson, R.

SYPHONS

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British Syphon Co.
Durafort
Gerat and Co.
Gueret Frères
Lang, J. and J.
Southall Bros. (Lime Water)

SYRUPS

Stevenson and Howell (American Foam)

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Pearse and Wheatley
Spinner and Co.
The Gt. Tower St. Tea Co.
Walker and Dalrymple

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Darton, F., and Co.
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Jan. 10th, 1885.

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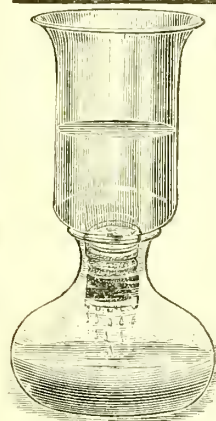
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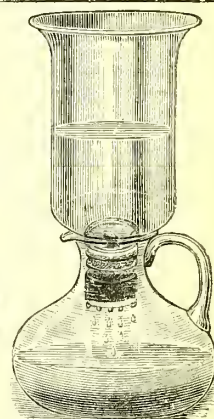
STYLE "W."—Plain: 1 pint, 2/3;
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Messrs. J. SANGER & SONS beg to inform their Customers and the Trade generally that the statement made by their late Traveller, Mr. Biffin, as to their declining Representation in the NORTH, MIDLANDS, WEST OF ENGLAND, and SOUTH WALES, IS ERRONEOUS. They have now replaced him on the road by a suitable Representative.

489 OXFORD STREET, LONDON, W.



[ESTABLISHED 1859.]

PRINCIPAL OFFICE, 42 CANNON STREET, LONDON, E.C.

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NORMANBY CHAMBERS, MELBOURNE,
AND
41 TEMPLE COURT, NEW YORK.*Published every Saturday.***Subscription 10s. per year, payable in advance ;
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The Week.

ADVERTISEMENTS of situations vacant, businesses for disposal, and such-like are now published by us in a special coloured supplement, by which arrangement not only is greater prominence ensured, but we are enabled to receive advertisements of that class later than heretofore.

READING CASES FOR "THE CHEMIST AND DRUGGIST."—We can supply neat black cloth, gilt lettered reading cases for THE CHEMIST AND DRUGGIST. Each holds thirteen copies—a quarter's supply—and is furnished with clasps whereby each copy is held in place. Chemists will find it very convenient to use these cases, and thus have the past three months' issues always at hand. The price of each case is 1s., or free by parcels post 1s. 3d.

"THE CHEMIST AND DRUGGIST" of July 31 will be circulated among all the principal buyers throughout the British Empire. Our colonial circulation is of great importance, and we are making special efforts to extend it in all directions. Advertisers may rely on their announcements being read in every corner of the earth where the English language is used. For the number referred to circulars and price-lists can be received, and their distribution with this Journal offers particular advantages in economy as well as prominence.

THE PATENT OFFICE LIBRARY, 25 Southampton Buildings, Chancery Lane, is now open from 10 A.M. to 10 P.M. For chemists this is one of the most convenient and useful consulting libraries in London.

POST-CARD COMPETITION.—No. 3.

WE remind subscribers of our offer of a guinea for the best suggestion for a family medicine-case, which shall retail at not less than 2s. 6d. and not more than 10s. As already indicated, we give competitors considerable latitude, and they may either send us a rough specimen of what they suggest, or a description of the case that they propose to give and how the contents are arranged. In any case particulars as to doses and uses of the remedies should be stated. We have received sufficient suggestions and inquiries to show that this competition is of some practical importance. In reply to several inquirers we may state that they should detail the prices of the case and its contents, but anything else may be suggestive merely. Other particulars are given on page 33 of our last issue. We shall receive suggestions up to and including Saturday next, July 24th, and we expect to announce the result on the Saturday following.

THE SOCIETY OF CHEMICAL INDUSTRY has held a highly successful meeting at Liverpool during the week, the feature of which has been a very important history of the alkali trade, from the retiring president, Mr. E. K. Muspratt. Mr. David Howard has been elected to the presidential chair for the coming year, and Glasgow has been chosen for the next meeting place of the society.

AMERICAN PHARMACISTS all over the States have been having a good time during the past two months, in the sessions of the various State Pharmaceutical Associations. The meetings have on the whole been well attended, numerous practical papers have been read, and the festive arrangements have been all that could be desired.

THIS GEM we cut from the presidential address of the Virginia Pharmaceutical Association:—"There never has been a perfect druggist, and there never will be. The science of pharmacy is more or less connected with all the natural sciences, and a perfect acquaintance with them is very rare. A good pharmacist should thoroughly understand the principles of his profession as well as the responsibilities of his business, and he should have a good practical experience in all its details; without which technical knowledge does not amount to much."

A NEW USE FOR CARBOLIC ACID has been discovered by an Australian inventor, namely for tanning leather. We had thought that Australia affords more than enough natural tanning material without this invention. In the process the skins, which have been limed in the ordinary manner, also haired and prepared if for the production of sole leather, are placed in a bath consisting of a mixture of 10 gallons of water, in which 200 pounds of soap are dissolved, and containing 1 gallon of carbolic acid, the skins being left in the bath until tanning is complete. The process may be considerably accelerated by adding a pint of fresh carbolic acid to the tanning fluid from time to time. For a softer leather the raw, limed, and haired skins are for one or two days placed in a mixture of four parts carbon bisulphide and one of carbolic acid, and then washed.

DIARY FOR NEXT WEEK.

Tuesday, July 20.

Public sales of drysalteries at the Commercial Sale Rooms, at 1 P.M.

Colonial and Indian Exhibition Conference.—Paper on "Tropical Fruits," illustrated with specimens and diagrams, by Mr. D. Morris, assistant director of Kew Gardens.

Wednesday, July 21.

Public sales of spices at the Commercial Sale Rooms, at noon.

Thursday, July 22.

Public sales of drugs at the New Commercial Sale Rooms, Mark Lane, at 10 30 A.M.

CORNER FOR STUDENTS.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

QUALITATIVE ANALYSIS.

THE subject of the next exercise in Qualitative Analysis will be a mixture of salts. It is to be submitted to a thorough systematic examination, such as is required to detect all its constituents and to demonstrate the absence of other substances. In reporting, students are to give a brief account of the analysis, with a summary of the results obtained, distinguishing, as far as possible, any accidental impurities which may be detected from the chief constituents of the mixture.

Students' applications for a portion of the mixture will be received up to July 24, and the samples will be forwarded on July 29.

Students' reports will be received up to August 14.

REPORTS.

The mixture of salts distributed to our correspondents for analysis in May consisted of:—

	Parts
Bismuth oxy. nitrate	25
Calcium carbonate	40
Potassium bitartrate	40

It will be found by calculation that the composition of this mixture was as follows:—

Bi	13.72
Ca	16.00
K	8.30
O	1.05
H .. .. .	.71
NO	4.05
CO ₂	24.00
C ₁₂ H ₁₀ O ₄	31.49
H ₂ O	1.18
	100.00

Seven students failed to detect the nitrate and four failed to detect the tartrate; these are the only important omissions which we have to record. The presence of an organic acid produced some puzzling effects, and led to wrong conclusions in several cases. The chief result was to give the impression that a phosphate was present. Supposing the mixture to have contained aluminium, chromium, or iron, further difficulties would have arisen, as tartaric acid interferes with the precipitation of those metals as hydrates. No special mode of procedure can be devised which will suit every case of this sort that may arise, but, as a general rule, it will be found that the best plan is to get rid of the organic matter altogether. If the metals only are to be sought for, ignition may be resorted to, bearing in mind that volatile metals, such as mercury, arsenic, cadmium, or zinc, may be lost in this operation. The acids cannot be dealt with in such a general way, as, of course, ignition in the presence of an excess of carbon would have the effect of decomposing most of the compound radicles and volatilising several others. The acids must be sought for by special methods devised to suit the exigencies of the case, a course which may call for the exercise of some ingenuity, though it will generally be found that the difficulties which actually occur in practice are by no means formidable.

PRIZES.

The First Prize for the best analysis has been awarded to CHARLES B. GIBSON, 39 High Street, Margate.

The Second Prize has been awarded to GEO. W. BLANKLEY, Arnold, Notts.

Marks Awarded for Analyses.

C. B. Gibson (first prize) ..	95	J. T.	75
G. W. Blankley (second prize) 92		Nosirrah	75
Meteor	90	J. B. R.	73
J. C. Kidd	90	X. Y. Z.	73
J. H. Haslett	88	Second Attempt	70
Allyl Iodide	87	J. Austin	63
T. G. J.	85	L'homme de la Nature ..	65
A. Shaw	85	E. F. Young	50
W. C. Marshall	83	F. E. E.	45
J. C. Ames	80	Lettiklaw	45

TO CORRESPONDENTS.

Prizes.—The students to whom prizes are awarded are requested to write at once to the Publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as second prize.

. All communications should include the names and addresses of the writers.

C. B. GIBSON.—The absorption of ammonia in the way you mention by a slightly acid solution of platinum chloride is a risk which must be guarded against in testing for potassium.

J. C. KIDD.—In the case of the acid radicles, as well as in the case of the metals it is necessary to show that only those detected constitute part of the mixture.

J. H. HASLETT.—Your results were quite correct, but the method by which they were arrived at was not quite satisfactory. A more complete preliminary examination is desirable, and the acid radicles require a more exhaustive treatment.

T. G. J.—Your report is drawn up with unusual neatness; it shows the whole scheme of analysis at a glance. The tartrate had not been completely separated from the solution which you tested for the entire radicle.

W. C. MARSHALL.—In testing for phosphoric acid with ammonium molybdate, a mere yellow colouration of the solution is no indication of phosphoric acid, you must obtain a yellow crystalline precipitate. This precipitate contains only three per cent. of phosphoric anhydride, so that the reaction is a most delicate one.

J. C. AMES.—Four per cent. of the nitric radicle is a large proportion to overlook, but the test you employed, and which is about the best, is one the success of which depends to an unusual extent upon the practical experience of the experimenter.

J. T.—The reactions which led you to conclude that a phosphate was present were all due to the presence of a tartrate. We repeated your test with ammonium molybdate without obtaining any trace of a precipitate. For reasons which must be obvious to you this test was the only one which, under the circumstances, would have clearly distinguished between a phosphate and a tartrate.

NOSIRRAH.—Your report suggests very superficial work; you should aim at thoroughness.

J. B. R.—You seem to have forgotten that a nitrate might be present.

X. Y. Z.—The residue from the aqueous solution in which you found sodium consisted almost entirely of potassium salts, as you might readily have ascertained by the platinum chloride test.

SECOND ATTEMPT.—On heating the original dry powder the smell of burnt sugar was very noticeable; this, of course, suggested a tartrate or citrate.

L'HOMME DE LA NATURE.—The flame colouration which you observed was produced by calcium; it resembles a very weak strontium colouration. If you try the experiment with a minute quantity of strontium chloride you will find that the colouration is intense.

F. E. E.—Your analysis was most incomplete; you demonstrated the absence of only one metal, barium.

LETTIKLAW.—You found that the powder was completely soluble in dilute hydrochloric acid, and that it contained barium and the sulphuric radicle. This is impossible.

NEW COMPANY.

MANX SHRUB COMPANY, LIMITED.—This company was registered on the 5th inst., with a capital of 5,000*l.* in 5*l.* shares, to acquire the rights of Mr. George Quarrie, of Ulverston, in respect of a patent medicine called "Manx Shrub." The subscribers are:—T. Steel, Barrow-in-Furness, chemist, 5 shares; E. Satterthwaite, Ulverston, clerk, 1; J. H. Postlethwaite, Barrow, accountant, 1; G. H. Mackereth, Ulverston, chemist, 5; J. Walker, Ulverston, grocer, 1; J. Park, Ulverston, solicitor, 1; and R. Casson, Ulverston, auctioneer, 5. Registered without special articles.

Metropolitan Reports.

MESSRS. HOWARDS & SONS' ANNUAL EXCURSION.—Saturday, June 26, was high-day and holiday with a large number of the inhabitants of Stratford, or, to speak more correctly at this present time, the Parliamentary Borough of North West Ham, and at an early hour in the morning crowds of men and women, boys and girls, assembled at the Stratford Central Station. This was "Howards' Excursion," an annual event well known in the neighbourhood. Not only are the employes (numbering about 300) of Messrs. Howards' firm all taken, but each has the privilege of taking friends at cost price, and so highly is this esteemed that the total number of excursionists reached nearly 700. To each employe the full day's pay, the railway ticket, and a sum of money is allowed. The men also select the seaside town to which the excursion shall take place, and this year Clacton-on-Sea had been chosen. This popular watering-place was reached soon after 9 A.M., and very little time was lost in clearing away from the station, the company dispersing to the beach, for sailing, rowing, or bathing, or resting on the pier, where they enjoyed the music of a capital string band. At 1 P.M. the various hotels and refreshment-rooms were attacked, while a party—including the foremen and their wives, together with a few friends—assembled at the Royal Hotel for dinner, under the presidency of Mr. Alfred G. Howard. After dinner the chairman proposed the "Queen and Royal Family," and this toast having been duly honoured, Mr. John Hireson, who had been with the firm for the past fifty-five years, proposed their "Health and Prosperity," to which Mr. A. G. Howard replied, expressing the pleasure it afforded him to meet them all that day. Owing to the slackness of trade, and much to the regret of all members of the firm, several hands had to be discharged last November, but, he was thankful to say, most of them had returned, and the number this year exceeded that of last, and he hoped the numbers would still go on increasing each succeeding year. At the present time everything was cut very close, and it certainly took a great deal of time and thought to keep ahead of foreign competition; but still he thought there would be no difficulty in holding their own anywhere, especially if they felt there was the same kindly feeling towards them from their employes as there always had been in the past. The visitors, the press, and the ladies were afterwards honoured, and in the latter part of the day trips were made by parties to St. Osyth's and Walton-on-the-Naze. Stratford was reached again about 9.30 P.M., and the day was regarded as one of the most pleasant and successful outings ever held by the firm.

CRICKET.—THE CHEMISTS' AERATED WATERS ASSOCIATION *v.* STEVENSON AND HOWELL.—Played at the West London Cricket Ground, Wormwood Scrubs, on Saturday, July 3.

The Chemists' Association.

E. G. Brady, b. R. Howell ..	2
H. T. Butler (capt.), run out ..	3
E. A. Doo, c. Carpenter, b. V. Howell ..	11
H. Davenport, b. R. Howell ..	1
F. G. Pirie, b. V. Howell ..	33
F. Gould, b. Winch ..	3
H. M. Marshall, c. and b. Winch ..	0
E. Pettit, b. V. Howell ..	2
F. Westlake, b. V. Howell ..	7
W. Talmadge, b. R. Howell ..	0
J. Weller, not out ..	0
Extras ..	17
Total ..	79

Stevenson & Howell.

W. E. Winch, c. Doo, b. Pettitt ..	0
R. Howell (capt.), not out ..	63
Hunt, c. Doo, b. Pettitt ..	0
A. E. Parnell, b. Davenport ..	12
V. Howell, b. Davenport ..	0
F. Carpenter, b. Davenport ..	0
Stannard, c. Pirie, b. Pettitt ..	0
J. Foley, b. Davenport ..	5
Branscombe, Jun. c. Doo, b. Marshall ..	0
Branscombe, Sen. b. Marshall ..	0
Marlow, b. Davenport ..	0
Extras ..	10
Total ..	93

Trade Notes.

MESSRS. GEORGE HALLER & Co., the agents for Lano-line, &c., have removed to 86 Leadenhall Street.

THE old-established business in Oldham Street, Manchester (established nearly three-quarters of a century), and for a considerable time carried on by the late Mr. Foden, chemist and dentist, has been closed.

Provincial Reports.

BIRMINGHAM.

MR. T. L. REEVE, 92 New Street, is about opening a branch establishment in Solihull, a few miles from Birmingham.

MESSRS. CROOKE & TAYLOR (successors to Mr. Thomas W. Holdsworth), wholesale druggists, have removed from 31 & 32 Steelhouse Lane to more extensive premises in New Meeting Street, the Corporation taking their old premises down for so-called street improvements.

SALE OF A DRUGGIST'S STOCK.—On Thursday, July 8, the shop fittings, fixtures, stock, and trade utensils (consisting of about two hundred lots) of Mr. Charles Flewitt, chemist, &c., 92 High Street, were sold in public auction by Messrs. Frank Smith & Wilson. Several well-known chemists were present, and the lots realised better value than was the case at the last few druggists' break-ups. The fixtures and stock of the above business had been valued by Messrs. Southall Bros. & Barclay, a circular to that effect being sent to the trade; but as no satisfactory tender was offered, all came under the hammer.

BERWICK-ON-TWEED.

A COUNTER THIEF.—On Monday, July 12, at Berwick Police Court, James Ward, labourer, Cornhill, was charged with stealing a bottle of eau de Cologne and a bottle of vaseline from the shop of Mr. Lyle, chemist, and also with being drunk and disorderly. The evidence given showed that the prisoner had taken hold of some ladies round the waist. He was sentenced to one month's imprisonment.

BRYNAMMAN.

A SWARM OF BEES one evening last week made for the chimney of Mr. Thomas Evans, chemist, of this place. Mr. Evans mounted a ladder with a hive, but found the bees had descended the flue. Straw was burnt in the bedroom grates with the object of driving them up, but this plan did not succeed. At last the bees were found to have settled in an old grate behind the shop fixtures. They were got out through the bottle cupboard with great difficulty by sweeping them into a stiff card, and they were then thrown into the hive. The next morning they were taken into the garden, where they seem to thrive well.

LEAMINGTON.

INFANT APPETITES.—A Birmingham paper says:—The little street-urchins of Leamington seem to be unfortunately careless in the matter of diet. Anything that has the least appearance of being eatable or drinkable is apparently uncontaminately swallowed without the slightest regard to consequences. Only last week some infants drank not wisely but too well from a street watering cart, and were half poisoned by the disinfectant fluid it contained. Yesterday several children, seeing some highly-coloured powder on the top of a sewage manhole, came to the conclusion that it must be sherbet placed there by the benevolent corporation for their special delectation, and accordingly ate a quantity. The powder, strangely enough, proved to be carbolic acid, and one at least of the children is dangerously ill. Cannot the local authorities educate the rising generation of the Royal Borough to a better taste? Even an appetite for lollipops would be less dangerous than this craving for carbolic acid.

LIVERPOOL.

LIVERPOOL GEOLOGICAL ASSOCIATION.—At the monthly meeting of this Association, which was held in the Free Library, William Brown Street, a paper was read by Mr. Herbert Fox on "Strontium: its Minerals and their Uses." Strontium compounds are now largely used in sugar refining and in pyrotechny, through the discovery of new supplies.

MESSRS. J. H. & S. JOHNSON, chemists, of this city, have set an example which might be followed with advantage by many exhibitors at the Liverpool Exhibition. Among no

class of exhibitors is good light more necessary at night than among those of the drug and fine chemical trades, which for the most part are near the sides of the galleries. Though the building is well enough lit for all ordinary purposes, by the electric light fine exhibits within the recesses of deep cases are inadequately illuminated, and close inspection can only be carried on with difficulty. Messrs. Johnson have just remedied the defect so far as their own exhibits are concerned by introducing a small incandescent globe into each of their cases. The result is highly satisfactory, the novelty having attracted a good deal of attention.

CHARGE OF FORGERY.—At the Liverpool Police Court on July 8, before Mr. Raffles, Percival Gilbert, a young man of respectable appearance, was charged with forging and uttering a cheque for the sum of 7l. Mr. Marks appeared to prosecute, and Mr. Sefton defended. It was stated that the prisoner went to the offices of Messrs. Evans, Sons & Co., wholesale chemists and druggists, 56 Hanover Street, and presented to the cashier a cheque for 15l., drawn on the Lincoln and Lindsey Banking Company, Boston, and endorsed "J. C. Swinburne" and "John Lambart." The last-mentioned person, who carries on the business of a druggist at Durham, is a customer of the firm, and also a brother-in-law of the prisoner. The cashier, believing that the document was a genuine one, advanced the prisoner 7l., but it was subsequently discovered that the cheque was a forgery. Detective McConkey apprehended the prisoner, who, in answer to the charge, said that he would repay the money if he were allowed time. On the application of Mr. Marks, the prisoner was remanded for a week.

MACCLESFIELD.

A SHOCKING SUICIDE took place on July 8. Thomas Bates, aged twenty-two, assistant in his father's chemist shop, was remonstrated with when he got home on Wednesday night, at a late hour, on his conduct. He retired to his bedroom, taking with him a bottle of prussic acid. An apprentice in the same room saw him drink what he thought was a glass of water, but immediately afterwards discovered he was dead.

OXFORD.

THE OXFORDSHIRE AGRICULTURAL SOCIETY held its annual exhibition on Tuesday, June 29. A very interesting feature of the show was the collections of wild flowers made by cottagers. The judge of these was Mr. G. Claridge Druce, pharmaceutical chemist, who is well known for his botanical researches, particularly in the flora of Oxfordshire. The show was visited by Prince and Princess Christian, and Mr. Druce was introduced to the royal party, and pointed out to them some of the more interesting wild flowers, such as the bee orchis, the bird's-nest orchis, the white-flowered helleborine, foxglove, nightshade, henbane, birthwort, snapdragon, yellow toadflax, &c.

WELSHPOOL.

THE STRYCHNINE POISONING CASE.—At the Montgomeryshire Assizes, held at Newtown on Friday, July 9, before Mr. Justice Grove, William Samuels, stall-keeper, of Welshpool, was indicted for the wilful murder of William Mabbot, a shop manager, of the same place, by administering strychnine to him in a pot of porter. We have already reported the facts of the case. After a long hearing the prisoner was found guilty and sentenced to death.

SCOTLAND.

EDINBURGH.

THE EDINBURGH EXHIBITION promises to be a big success so far as attendance is concerned. Up to the present time a million visitors have passed the gates, which is perhaps the largest attendance recorded at any exhibition out of London.

POISONING.—John Martin, a man of forty, residing in Falkirk, who had been in a despondent state of mind for some time, sent his daughter for sixpennyworth of laudanum last Friday. He took the whole of this at one draught, and so ended his sorrows.

POISONING WITH SALTS OF SORREL.—On Saturday night a married woman, about fifty years of age, named Margaret Campbell, was admitted to the Royal Infirmary suffering from the effects of a quantity of salts of sorrel, with suicidal intent. She died on Sunday night. Suicide with this poison is becoming very common in Scotland.

PROFESSIONAL OR SHOPKEEPER?—Thursday last was the shopkeepers' annual holiday here. This day is very generally observed by butchers, bakers, and others connected with the provision trade. Chemists, however, do not recognise it. Notwithstanding, one chemist on the south side closed his place of business and took a holiday. Of this, one has said to us that it is *infra dig.* to connect our professional status with the other shopkeeping interests; while another has remarked that the proceeding deserves the highest commendation for the advanced ideas which it indicates. Who is right?

CHEMISTS AND BOTANY.—The Chemists' Assistants' Association had a botanical excursion on the morning of Thursday, July 8, to Craigcrook Quarry. There was a good turnout of members, most of whom left Prince's Street Station at 5.50 A.M. for Craigleith, where they were joined by another detachment. All then proceeded on foot to Craigcrook, a distance of about a mile and a half. The weather was all that could be desired. The following were among the more important specimens taken:—*Scrophularia nodosa*, *Silene inflata*, *Mentha aquatica*, *Stratiotes aloides*, *Iris pseudacorus*, *Sparganium simplex*, *Potamogeton natans*, *Veronica beccabunga*, *Berberis vulgaris*, *Nasturtium officinale*, *Roseda luteola*, *Alisma plantago*, &c. The party returned to the city about 8.30, after a rather hurried, but otherwise most enjoyable, morning. It has been arranged to start a herbarium in connection with the Association.

Chemists, and town chemists especially, writes a correspondent, are never very celebrated as early risers, but the turnout at the botanical excursion on Thursday is a good illustration of the proverb, "Where there's a will there's a way." It was not a little sad, however, to observe the beautiful summer landscape traversed on every hand by ruthless vandals, to feel the fresh morning air polluted with tobacco smoke, and to hear the cheerful singing of the birds drowned by the occasional strains of some comic song or a few bars of the latest waltz. But, apart from these irregularities, botanical excursions are always productive of much good among pharmaceutical students. Botany is a subject usually left over till a few weeks before the examination, and opportunities for practical work are thus in great measure lost. The example of the Edinburgh Association might with advantage be followed by many Chemists' Associations throughout the country.

The noble effort of catching the 5.50 A.M. train and returning at 8.30 breakfastless, or nearly so, to business in the city is one which will not easily be forgotten by those who had to make it. But it had its reward. A delightful morning, an invigorating walk, and a rich haul of specimens, all went to make the excursion, like all other efforts of that Association, a great success.

Botanical excursions have always a peculiar fascination for all classes of students. Old botanists go that they may display their knowledge; young botanists go that they may learn; good botanists go to study; bad ones to appear better than they are; and indifferent ones that they may "have a lark." In a Saturday excursion of a botany class, for example, we have a good assortment of all these classes. It is also very remarkable that the roadside inns appear often to possess an attraction greater even than the charms of science. As each "house" is passed the numbers grow gradually less and less, until in the end "beer and botany" have a strong fight for the mastery. The former generally (sad to say) wins, and the refreshment of the mind must give place to the refreshment of the body.

Last Thursday, however, the worthy band of pharmaceutico-botanists, thanks to the early hour, had no such temptation. With them it was the thirst for knowledge that had to be slaked, and the only glass indulged in was the magnifying-glass. Who cannot but admire, not only such noble self-denial, but also the Association that gave birth to it!

Let all who admire also imitate, and prove for themselves the desirability of botanising on a fresh summer morning rather than on a dusty Saturday afternoon.

EDINBURGH INTERNATIONAL INDUSTRIAL
EXHIBITION.

(SPECIAL REPORT ON MACHINERY.)

WHILE the cutting grocer, the oilman, and others have been encroaching in recent years on the druggist's line of business, it is equally true that druggists are tending to combine many businesses under the sheltering title of "Chemist and Druggist." Hence it comes about that while some fifty years ago the mortar and pestle were almost the only instruments of interest to the ordinary druggist, now we are at liberty to describe gas and steam engines, ventilating-fans, aerated-water machinery, and yet be sure that our subject will interest some of our readers.

It requires but a very cursory glance through "Our Own-cries" (as the great show in the West Meadows has been called) to see that the exhibits of pharmaceutical instruments and machinery are conspicuous by their absence. Rotary pill-machines, drug-presses, or grinding-mills, improved forms of percolators, or pharmaceutical stills, are all wanting, and, but for the various cases containing drugs, pills, or essences, one might forget the very existence of the "king of trades"—the drug trade.

There is, however, a very comprehensive display of machinery in motion, estimated to cover double the area occupied by that department at the Inventories last year, and among the exhibits in this section a few novelties are to be seen. The manufacture of aerated waters is now so important an adjunct to a chemist's business that it is to be regretted for the sake of our northern friends that the display of machinery in this department is practically limited to the exhibits of Messrs. John McGlashan & Co., Albany Works, Glasgow, and Mr. Dan Rylands, of Barnsley. In these instances, however, the displays are very complete and instructive, although one would have wished to have been able to compare the merits of machines made by other makers with the handsome exhibits above mentioned. Much disappointment has been felt that no self-acting wiring and tying machine, of which there are several in the market, is exhibited; and it is significant as a sign of the times that no machines for filling corked bottles are to be seen in operation. The exhibit of Mr. Dan Rylands occupies a space of some 34 feet by 16 feet. He has fitted up a complete model soda-water factory, which is worked by Messrs. Duncan, Flockhart & Co., chemists to the Queen, Edinburgh, who here manufacture daily from 250 to 400 dozen of waters for the use of the refreshment rooms in the exhibition. The exhibit is in two divisions. On one, Mr. Rylands shows complete sets of soda-water machinery, from the tiny "chemist's plant," capable of producing 100 dozen per day, to his larger appliances, which he claims can turn out 3,000 dozen daily with ease. On the other the washing, bottling, and labelling of the various waters is carried on. Although well known to those who study our advertisement sheets, Mr. Ryland's automatic generator, by its novelty, in Scotland at least, has attracted much attention among manufacturers who have visited the exhibition. This useful machine consists of a substantial cast-iron frame, supporting the generator and gasometer, as well as a tub for mixing the whitening with water prior to use. The whitening being placed in the mixer along with a sufficiency of water is ground to a cream by a revolving fan, and by a simple contrivance is made to enter the generator from below, the entrance of air being impossible. An automatic acid tap, using an ingenious valve arrangement of glass ball and lead, regulates the supply of vitriol, while the ascent of the gasometer suffices to cut off the supply entirely when sufficient gas has been generated. The final exhaustion of the charge is indicated by the descent of the gasometer and the ringing of an electric bell. A new charge can be introduced and the old removed within five minutes, while a considerable saving of acid is effected. The condensers exhibited are all self-saturating, *i.e.*, have no agitators, and produce water of excellent quality. The impregnation is effected by the contact of carbonic acid gas with water in a fine state of division. The water and gas enter the cylinder at the top, and the former in passing to the bottom is distributed by means of shell tin and perforated plates, so that before it becomes quiescent at the foot it has become thoroughly saturated with gas.

An interesting example of the development of aerated water condensers is afforded in this case. Many of the earlier machines (say 10 years ago) were furnished with small condensers holding from two to four gallons of water—agitation being effected by revolving shafts; but in later years the tendency, founded on experience, has been to increase the size of these vessels to hold from twenty to sixty gallons of liquid. The adoption of self-saturating appliances has again reduced the size of the vessel, so that the largest here exhibited only hold about twelve gallons. We notice that even in them the water level rarely indicates more than three gallons, and we understand the only drawback lies in the fluctuations of this small body of liquid. It would seem that in increasing the dimensions of this class of condenser the advantages are gained by an increase in width, rather than in height. The bottling division of this exhibit is an example of *multum in parvo*. Although only 16 ft. by 12 ft. the whole work of washing, syruing, filling, and labelling as many as 600 dozen bottles has been accomplished in one day in this diminutive factory. The syrup-manufacturing plant, the vitriol-tank, and the whitening-bins are placed on a raised platform. Below are the washing tubs, where washing is done entirely by hand and brush—a testimony to the value of this method over the much-vaunted soaking wheels, &c. The filling is accomplished by two "Rapid Paragon" turn-over machines, with self-acting syringers, which when desired can turn out 140 dozen bottles per hour. The bottles in use are the Reliance, Crystal Valve, and Bulb glass-stoppered, the relative merits of which are still *sub judice*.

Messrs. McGlashan & Co. exhibit no machinery in motion, but have a full assortment of requisites for the soda water and beer bottling trades. A nickel-plated plant named the "Albany," capable of producing 3,000 dozen daily, has received favourable comment, although the single small-sized cylinder (requiring agitation) seems hardly to be in accord with modern views. Special forms of turnover and upright patent bottle fillers are shown, and the different automatic syringers receive due attention.

Even to those whose business does not lead them to become thoroughly acquainted with steam engines, the department containing the *prime movers*, as they are called in the official catalogue, is one of general interest. Since the days of Watt steam engines have been the subject of unceasing investigation and study, attention being mainly directed to the more thorough utilisation of the steam energy, and the consequent reduction in the consumption of fuel. At the same time the simplification of parts has been strenuously insisted on till it has been said by bold materialists that the engine is nearly as perfect as man. In the examples exhibited all the more important improvements are to be found, but many of these relate to automatic appliances designed to secure a prompt "cut off," so that no more steam may be admitted to the cylinder than is necessary for the work to be done: but as the details of these appliances are too technical for this report, we will only refer to those engines which claim special attention. A feature in most of the engines is the narrowness of the bearing parts. It is amazing how few even among practical engineers believe that a bearing 1 inch broad offers as much resistance as one of 4 inches, while the steadiness and lasting power of the latter is incomparably greater. Owing to this misapprehension and a desire for elegance we find many of the engines with bearings quite unsuited for the exigencies of practical work.

One of the most interesting novelties in this class is the "Westinghouse" automatic engine, patented by the inventors of the well-known railway carriage brake, and shown by Alley & Maclellan, Glasgow. This engine, running at a speed of 650 revolutions per minute, is coupled direct to a Guleher dynamo which runs at the same speed, the power being conveyed without the intervention of cross-belts or fly-wheels. The chief advantages claimed are its compact arrangement, the small space occupied, the high rate of speed, and the avoidance of loss of power, which is unavoidable when belts are required, and these are all such as to make it an acquisition at a time when electric lighting is beginning to take a prominent place.

The "Unique" engine, invented by Mr. James Maxwell, of the Paragon Saw Mills, Edinburgh, which is only in the experimental stage, and is here shown driving a pair of fans, has several new features in connection with the admission of steam to and its distribution in the cylinder, as well as the

manner in which the exhaust is effected; the advantage claimed being "reduced friction, the absence of any eccentrics or slide-valves, and the saving of power in working the exhaust, which is obtained by the action of the piston." Messrs. Robey & Co. exhibit a small high speed horizontal engine specially designed to afford economy of space in connection with electric lighting. In this instance it is fixed to the same cast-iron bed as a dynamo, and a very short belt suffices to convey the power, a speed of 300 revolutions being attained.

Among gas engines several novelties are exhibited. In the familiar "Otto" Crossley Brothers have made several improvements in the way of regulating the speed, overcoming noise from the running of the wheels, relieving the pressure of the slide-valve, and protecting the valve from dust. Several engines are exhibited in which the water cisterns are taken away with, the heat being taken from the cylinder by radiating plates, as in the Bisschop vertical engine, "Maggie's" patent, and the Dougill engine.

The boldest innovation, however, is "Atkinson's Patent Differential Compression Gas Engine," which was awarded a gold medal last year at the Inventories, and at that time attracted considerable attention not less on account of its peculiar motion than of its constructive principles. It has two pistons working in the cylinder, and the charge is exploded between them at each revolution. There is no slide valve, and great simplicity has been attained.

There is only one hot-air engine, and this is shown at the stand of Carrick & Ritchie, and is an example of Robinson's patent. The expansion of the air, which is heated by a Bunsen burner, supplies the motive power, and a speed of 200-300 revolutions per minute is obtained.

A very neat hydraulic engine is shown by John Hastie & Co., Greenock (No. 1288). The whole space occupied is about 8 in. by 6 in., and a $\frac{1}{4}$ -inch pipe supplies all the water that is needed. A small belt connects it with a sewing machine, and considerable interest has been excited by its small compass as well as by its performance. It claims to be the only hydraulic engine which regulates the water used to the work done.

A large number of makers exhibit collections of Bunsen and other atmospheric burners, many of which possess their own advantages, but nothing of special novelty can be noted.

Messrs. Milne & Son, Melton House, Edinburgh, exhibit an ingenious French patent, which it would be well for chemists and those who use gas for cooking purposes to inquire after. It consists of an ordinary atmospheric ring burner on a cast-iron stand, and in the centre of the ring a knob projects upwards for half an inch. This knob is connected by a lever with the stop-cock, which is furnished with a "by-pass." When the gas is turned on and lighted it continues to burn till the vessel which is being heated is removed from the burner. Whenever this occurs the lever rises, shuts off the gas, and only a small jet is left burning by means of the "by-pass." On putting the vessel on again, the reverse action takes place, the gas is turned on full, while the small jet is extinguished. The economy of this proceeding will be apparent to those who have apprentices or domestic servants looking after their Bunsen burners.

Among other things this firm exhibits the "McKinless Gauzeless Safety Lamp," which has properties which recommend it to those druggists who require to take a lantern into an ether cellar. In this the "generally accepted theory of a safety lamp is entirely reversed, as instead of limiting the inlet of air to a quantity only sufficient to feed combustion, and giving the results of combustion a large escape, the inlet in this case is very large, whilst the outlet is limited to the greatest nicety." It would take too long to describe how this is accomplished, but we are informed that "at the Aldwarke Train Testing Apparatus it stood better tests than any other lamp known."

Mr. Fletcher, Warrington, the well-known maker of gas-heating apparatus, has a large display of his appliances, most of which are already familiar. We call attention to two of his exhibits. Those who have had occasion to use ordinary gas tubing in rooms know how objectionable a smell is produced by the diffusion of certain constituents of the gas through the rubber. Various means have been adopted to avoid this, with but partial success. In Fletcher's patent, however, complete success has been attained, the special feature being a layer of tin introduced between two layers of rubber, diffusion in this case being impossible.

The odour which is observed when a kettle of water is placed on a Bunsen burner, the flame from which was previously odourless, is a matter of daily experience, and is the result of imperfect combustion. A piece of paper pasted on the bottom of such a kettle is not even charred, and it can be demonstrated that the reason is that a space of perhaps $\frac{1}{4}$ in. intervenes between the flame and the kettle. Mr. Fletcher, seizing this point, endeavoured to devise an arrangement by which the flame could be made to touch the kettle, and with success. He found that a knob, projecting say $\frac{3}{8}$ in., was still too rapidly cooled by conducting to admit of flame contact, while one 1 in. long became so hot as to be burned away. Accordingly, he exhibits a copper kettle, the bottom of which is studded with copper rods about $\frac{1}{2}$ in. long; and experience shows that in this the practical value of the gas used is doubled, one gallon of water being brought to the boil in three minutes, as compared with six minutes in one having a flat bottom.

We can only refer to three other exhibits which have a practical application in manufacturing chemistry. Messrs. Greig, Edinburgh, show a machine for drying tea leaves, in which air at temperatures ranging from 60° to 600° Fahr. is forced into a revolving drum. The desiccating effect produced is such that moist leaves of any description can be completely dried in from 10 to 30 minutes without in the least injuring their constituents. Various roots and other drugs are readily dried by this machine.

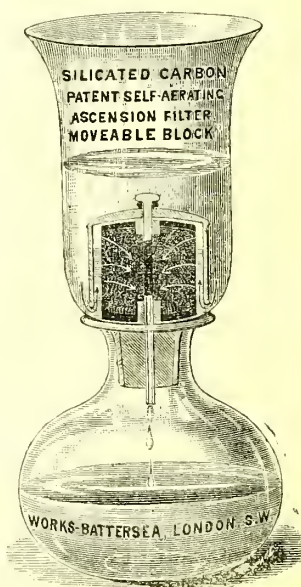
The "Blackman Air Propeller" is generally associated with the ventilation of factories, &c., but its application to steam pans in our pharmaceutical laboratories would, to a large extent, do away with the objections to evaporation of fluid extracts by heat, the rapid circulation of air hastening evaporation to an almost incredible extent.

The various sugar-drying and cream-separating centrifugal machines shown by Laidlaw and others may in the future become of more interest to chemists. By means of them, muddy extracts as ext. cascar. sagrad. B. P., essences of senna, or coffee could be clarified in a few minutes; while the separation of finely divided precipitates offers no difficulties.



SELF-AERATING FILTERS.

THE Silicated Carbon Filter Company have recently patented a new form of table-filter, the purpose of which is to provide a drinking water which shall be well aerated as well as pure. Their system of forcing the water to be filtered upwards through the carbon block, instead of downwards, is adopted, and by the use of a porcelain cover the block gets charged with air every time the filter is filled, and this is taken up by the water as it passes through. The arrows shown in the engraving show the direction taken by the water. The silicated carbon blocks in these filters are very easily cleansed and can be readily replaced. Their effectiveness as filtering media is well established.



CACUR, A KAFFIR EMETIC.

By G. ARMSTRONG ATKINSON, M.B.

(Abstract from the *Edin. Med. Journ.*).

ONE of the most frequently employed of the many emetics used by the Kaffirs of South Africa is a green or yellowish-green fruit known as *Cacur*, *Cacuo*, or *Small bitter apple*. The author received a small supply of this together with leaves and stalks from Mr. J. A. B. Bayley. The fruit is a pepo, is caducous, quite yellow when ripe, but is used by the natives in the unripe condition. They heat the fruit, squirt the contents into the mouth, and emesis is produced about fifteen minutes after swallowing. The author believed that the fruit was derived from a plant of the order *Cucurbitaceæ*, and this opinion was confirmed by Professor Oliver, of Kew, who believes it to be derived from *Cucumis myriocarpus* (Naudin), a green annual, referred to in "*Flora Capensis*," II., 495 (Harvey and Sonder). Mr. Bayley states that it grows throughout Cape Colony and the Free State generally. The plant produces fruit very abundantly; the pepo is subglobose, about the size of a large gooseberry (weighing from 60 to 100 grains), and is beset with short and soft prickles. A section shows three parietal placentæ, numerous seeds imbedded in a soft viscid pulp, which becomes more fluid when warmed. The pulp is bitter, and has a faint odour of cucumber. The rind is soft, but peels off with difficulty; the seeds are exalbuminous, and the testa, like the rind, is slightly bitter.

To determine its therapeutic action the author experimented with the pulp upon himself and upon a large dog, and concludes that it is an emetic and cholagogue purgative; purgative in non-emetic doses, and in doses sufficient to produce emesis causing purgation if sufficient of the drug has been retained. Its emetic action is probably local. The quantity of the drug at his command was too small to permit the author to make an exhaustive chemical analysis of it, but he has ascertained that it does not contain an alkaloid, but a bitter principle upon which its activity depends. He hopes to complete this part of the investigation at some future time.

Materia Medica Laboratories,
Edinburgh University.

TARTAR.

THE situations upon which deposits of tartar are found upon the teeth are, in order of frequency, the lingual aspect of the inferior incisors—that is, opposite the openings of the ducts of the submaxillary and sublingual glands, the buccal surfaces of the upper molars which face the orifices of Steno's duct, next the buccal surface of the lower molars, and sometimes the lingual surface of the molars of both jaws. The deposit is never found upon the lingual aspect of the upper incisors, which are not bathed with saliva, and, moreover, are constantly being swept by the tongue. It is capable of being formed in great abundance, especially when from any cause, such as a carious tooth, one side of the mouth only is used for mastication. Tartar is composed chiefly of earthy phosphates and carbonates, with which is mingled a certain proportion of organic matter, epithelial scales, fatty particles, filiform fungi, vibrios, and monas. The relative proportion of phosphates or carbonates varies very considerably in different analyses, and this is due to the material being taken from different parts of the mouth. Thus, if, from the buccal surface of an upper molar, it will be richest in carbonates, like the parotid saliva; whereas, when taken from the back of the lower incisors, it contains an excess of phosphates. Tartar is simply a deposition by precipitation of the salts held in solution in the saliva, which is brought about by its contact with air or mucus. The quantity of tartar varies largely in different subjects, for some salivas contain a small proportion of salts, and therefore the deposit is small; also if the precipitate meets with an acid—such as is so frequently found round the necks of the teeth and due to fermentation—sufficient to neutralise it, it will be redissolved. Thus the presence or

absence of tartar has a clinical significance. If it is very abundant, it indicates an alkaline reaction both of the saliva and of the parts around the teeth, and a consequent immunity from caries; but if allowed to accumulate, it produces gingivitis by simple traumatic irritation. In some very rare cases it is entirely absent, owing to an acid reaction in the mouth, which leads to the most disastrous ravages upon the teeth. Between these two extremes there is every mean. The gingivitis due to tartar varies according to the quantity deposited; in a mild case there will be merely a line of redness along the free border of the gum; in a more severe case the roots of the teeth will be stripped of gum and its place taken by tartar; the gum will be festooned, have a fungating appearance, and bleed at the slightest touch; the teeth will loosen and change their position, owing to the inflammation having extended to the alveolo-dental membrane and the absorption of the alveolus. The treatment consists essentially in a vigorous use of the tooth-brush and the periodical removal of the incrustation. Any tooth-powder or preparation which will remove it must be acid, and therefore very deleterious to the teeth themselves. Mr. Bland Sutton has found accumulations of tartar upon the teeth of monkeys, kangaroos, and lemurs at the Gardens of the Zoological Society, where it is an occasional cause of death from septic pneumonia. These deposits are almost invariably found in association with a carious tooth or necrosed bone.—*The Lancet*.

VOLATILITY OF IODOFORM.

DR. G. VULPIUS, in the *Pharmaceutische Post*, questions the correctness of Dott's statement (*THE CHEMIST AND DRUGGIST*, 1885, p. 512), which has been widely published, that iodoform loses 6.70 per cent. in an hour by evaporation at a temperature of 100°. Dr. Vulpius found that powdered iodoform placed in a layer on a watch-glass lost over 25 per cent. in weight in an hour, and that another and smaller sample of 1 gramme entirely disappeared in that time. He also mentions that the volatility may be greatly increased by rubbing the sample with a small glass pestle, and gives an interesting account of the cause of this increased volatility. It appears that the particles immediately touching the glass, which first evaporate, adhere to those above, which consequently serve as a crystallising centre and become greatly enlarged. These enlarged particles are not only separated from one another by about equal empty spaces, but they also touch the bottom layer with a very small surface only, and may be said to be enveloped in a cloud of iodoform-vapour. As soon as this arrangement has been effected, the rate of volatility falls to one-half of that mentioned above, but again attains the old rate by the crushing of the residue above mentioned. It is probably impossible to fix absolutely the rate of the volatility of such bodies in this manner, because the volatility is always influenced by the quantity used, the firmness of the powder, the shape and the material of the object upon which the iodoform is placed, and also by the current of air, and the size and temperature of the laboratory. In what degree the size of the surface exposed to the air exercises influence in respect to the weight of the substance may be judged from the fact that a 10-per-cent. mixture of iodoform placed in an ordinary laboratory drying-box, barely heated to 50°, lost all its iodoform in two hours. This method is considered the simplest way of ascertaining the percentage of iodoform in any mixture.

[Mr. Dott has received a copy of the foregoing note, and writes as follows:—"It appears that Dr. Vulpius has disputed the accuracy of my statement that iodoform loses 6.7 per cent. of its weight by exposure in a water-bath—I did not say at a temperature of 100°. Everyone knows that the rate of volatility of such a substance will vary according to the size of the crystals, the thickness of the layer, the rapidity with which the surrounding atmosphere is changed, and several other circumstances. The experiments I described were only intended to give a general idea of the volatility of iodoform; and they are, I think, of some interest with reference both to pharmacy and to surgery. My statement was perfectly correct, as anyone will find who repeats the experiment in the same manner.

"D. B. DOTT."]

Practical Notes and Formulae.

A CEMENT which is hard enough to withstand even boiling sulphuric acid may be obtained by gently melting india-rubber and adding 8 per cent. tallow while stirring. Sufficient slaked lime should be added to give to the compound the consistency of a soft paste. Twenty per cent. of vermilion is now added, which causes the mass to harden immediately.

BENGAL LIGHT BALLS are made by Schmidt (*Chem. Cent.*) from a mixture of 100 parts of collodion, from 1 to 10 parts of magnesium-dust, and 3 parts of barium chloride or strontium nitrate. After the evaporation of the ether by exposing the mixture in shallow pans to the air, the residue is pressed or formed into balls for pyrotechnic displays.

LARD.—At a recent meeting of the Philadelphia Pharmaceutical Association a member asked what was the usual practice in reference to lard for pharmaceutical uses, and what was found best. A member stated that he had lard made in the country specially for him, and found it entirely satisfactory. The inquiry was made whether the refined lard of commerce was pure enough for medicinal purposes; this was answered that one of the houses who refined very large quantities of lard stated that they made none at all, but merely refined it. It was queried, What percentage of water was present in commercial lard? but no one present stated that they knew what amount of water it did contain. The preservation of lard by means of benzoin and poplar buds was also discussed, and some thought that benzoic acid would answer as well as benzoin, while another present expressed the opinion that the resinous matter of the gum benzoin was the efficient agent.

A ROUGH-AND-READY TEST FOR BORAX in minerals is suggested by Mr. F. Calvert (*Scientific American*). It is to dip one end of a piece of wood in sulphuric acid, then roll it in a pinch of the powdered mineral; roast the mineral in any flame for a minute, then pour two or three drops of alcohol on the roasted mineral, and ignite. The characteristic green flame of borax will show if it is present.

GLYCERINE is said to be better than oil for whet-stones. It is used alone, or with a fourth of its volume of spirit.

COLOURED LACQUER.—To make zinc appear like copper various tinted lacquers are thus made:—(1) 4 oz. best gum gamboge dissolved in 32 oz. spirits of turpentine; (2) 4 oz. dragon's blood in the same quantity of spirits of turpentine, and (3) 1 oz. annatto in 8 oz. of the spirit. The three mixtures should be made in different vessels. They should then be kept for about two weeks in a warm place, and as much exposed to the sun as possible. At the end of that time they will be fit for use, and any desired tints may be obtained by making a mixture from them, with such proportions of each liquor as the nature of the colour desired will point out.—*Scientific American*.

LABEL PASTE.—Take of starch 2 drachms, white sugar 1 oz., gum arabic 2 drachms, water a sufficient quantity. Dissolve the gum, add the sugar, and boil until the starch is cooked.—*Scientific American*.

A GOOD TEST FOR SILVERWARE is as follows:—Put 6 oz. nitric acid, 1 oz. powdered bichromate of potash, 2 oz. water in a stoppered glass bottle. Rub a file over some obscure part of the silverware to be tested, and apply the mixture to it with the dropper of the stopper. If the article is pure silver, a clean blood-red mark will be left, less deep and lively the lower the quality. On platinum the test will have no action; on German silver a fine brown mark appears, removable with a sponge and cold water; on Britannia metal a black mark appears; on other metal a wholly different result takes place to that on silver.—*American Inquirer*.

PURITY OF DRINKING WATER.—It is often required to give a quick indication of the freedom, or otherwise, of water from organic products. The rough-and-ready permanganate test cannot be relied upon. Most organic bodies, that is those containing nitrogen, are converted into ammonia,

which is ultimately oxidised into nitrous and nitric acids. The detection of nitrous acid, therefore, is important, since its presence is sufficient to condemn any water for domestic purposes. Mr. C. C. Howard has suggested a ready test, which is as follows:—Into a test-glass place some of the water (not more than 50 c.c. or 3ijs.), and add a drop of hydrochloric acid, then a drop of sulphuric acid, and one of a solution of naphthylamine hydrochloride. If the water does not contain more than 1 in 100,000,000 after standing for ten minutes it should not show more than the faintest tint of pink colour.

CHARACTERISTIC RE-ACTION OF CITRIC ACID.—To distinguish citric from malic and tartaric acid, the following test is given by M. Mean (*Journ. Phar. d'Alsace-Lor.*):—Fuse together in a porcelain crucible 1 gramme of crystallised citric acid and 0.70 gramme glycerine, heat carefully until the mixture swells up and emits acroleine vapours; then dissolve in a little ammonia, of which the greater part is afterwards expelled by moderate heat; add two drops nitric acid (one in five) or peroxide of hydrogen (10 per cent.). Citric acid thereupon assumes a beautiful green colour, which changes to blue by heating. Malic and tartaric acids give no such reaction.

BROMIDIA (SUBSTITUTE).—A correspondent of *The New Idea* offers the following formula:—

Bromide potassium	..	..	..	..	3iv.
Chloral hydrate	..	..	..	..	3iv.
Ext. cannabis indica	..	..	..	..	gr. xvj.
.. hyoscyamus..	..	..	..	..	gr. xvj.
Water	..	..	..	..	℥j.

Mix the extracts thoroughly with chloral and bromide in a mortar; then add water slowly until a complete solution is effected; transfer to a bottle and let remain several hours, then filter. The want of success in preparing bromidia generally has been in using the commercial extracts, which give it a green colour, and are only partially soluble. Accordingly the correspondent recommends Squibb's extracts, which, he states, give no such trouble, and the article is equal, if not superior, to the original bromidia.

ANTISEPTIC PAPER.—Dr. Bedoin, of the military hospital of Vincennes, makes light, cheap, and effective applications for wounds by using instead of gauze, unglazed paper (filtering or cigarette paper) first sterilised in a drying cupboard at 110° C., then rendered antiseptic by immersion in a solution of carbolic or boric acid, sublimate, &c. This can be used in layers or plugs and is covered with thin sheets of gutta-percha.

A NEW FILTERING PAPER is manufactured in America (says the *Moniteur des Produits Chimiques*) the speciality of which is the addition of from 5 to 20 per cent. of wood or animal charcoal to the pulp.

GUTTA-PERCHA CAN BE VULCANISED readily and simply by making a concentrated solution in carbon disulphide, and adding thereto a solution of chloride of sulphur. The larger the proportion of the latter the greater the hardness of the resulting product, and by using about 15 per cent. of the chloride a body in every way similar to horn is obtained.

DENTAL LOCAL ANÆSTHETIC.—A correspondent of *Dental Cosmos* recommends the following solution, which enables one or two teeth to be extracted at one sitting, and under greatly diminished pain.

Stronger ether	..	..	..	..	3iss.
Menthol	..	..	..	..	3j.
Fl. ex. cannabis indica..	..	..	..	..	gtt. xx.
Ol. menthe piperitæ	..	..	..	..	℥xv.

Misc.

Saturate absorbent cotton with a small quantity (about sixty drops) of the compound, and apply to the gums, allowing it to remain about five minutes before operating.

FIRE-GRENADE SOLUTION.—The liquid contained in these fire-extinguishers is stated to be made of chloride of calcium, crude, twenty parts; common salt, five parts; and water, seventy-five parts.

Scientific Notes :

*On Chemistry, Pharmacy, Botany, Materia Medica, &c.,
Original, Selected, and Translated.*

IDENTIFICATION OF GREEN EXTRACTS.

AN aqueous solution of the extract is acidified with hydrochloric acid, and the alkaloid precipitated with Meyer's reagent; the precipitate, after well washing, is treated with weak alkali and the freed alkaloid dissolved out with a suitable solvent. The following are the details as given by the author C. Louken.

EXTR. ACONITI.—A few grammes are treated as above described, and the precipitate suspended in water and mixed with a few drops of ammonia. After extracting with light petroleum and evaporating the latter, the residue is heated on the water-bath with phosphoric acid, in which a few pieces of glacial phosphoric acid have been previously dissolved; after a short time the mass assumes a distinct violet colour.

EXTR. BELLADONNE treated as above, but extracted with ether, gives Vitali's atropine reaction perfectly. If the residue from the ethereal extract be mixed with a few drops of nitric acid, then heated on the water-bath, and finally mixed with a few drops of a solution of caustic potash in absolute alcohol, a beautiful violet colour is produced.

EXTR. HYOSCYAMI reacts similarly to *extr. belladonnae*, but precipitation with Meyer's reagent is not so complete, and the colour consequently less intense. To distinguish between the two extracts, the residue obtained by evaporation of the aqueous solution, to which some ammonia has been added, is best examined under the microscope. The crystals of *extr. belladonnae* are feathery, whereas in the case of *extr. hyoscyami* the appearance is that of two crystals lying crosswise one over another.

EXTR. DIGITALIS is not precipitated by Meyer's solution, but may be recognised by dissolving 1 gramme in water, and precipitating completely with lead acetate. The filtrate is then extracted with chloroform, and the residue remaining on evaporation of the latter gives a red colour on heating with concentrated sulphuric acid.—*Journ. S. C. I.*

[Note.—Pure aconitine does not give a colouration with phosphoric acid. Gerrard's reaction may be advantageously applied to the belladonna residue.—ED. C. & D.]

ACONITINE.*

ACONITINE crystallises in anhydrous forms which vary with the nature of the solution from which they have been obtained, whilst from an aqueous solution the aconitine separates in an amorphous form. It has a pricking, burning taste, but is not bitter. It is soluble in about 64 parts of absolute ether, 37 parts of absolute alcohol, 2,800 parts of light petroleum of 0.670 sp. gr., 5½ parts of benzene and chloroform, and 750 parts of water. Pure aconitine does not give colour reactions with phosphoric acid, sulphuric acid and sugar, or phosphomolybdic acid and ammonia, &c., the colours described by some authors being due to resinous substances in the impure material. Aconitine can, however, be readily detected under the microscope as follows:—A minute quantity is dissolved in water, acidified with acetic acid, and a particle of potassium iodide is added; on allowing the solution to evaporate, characteristic crystals of aconitine hydriodide appear, which remain after dissolving out with water the potassium iodide crystals simultaneously formed. The alkaloid group reagents act as follows on aconitine solutions. Iodine water, a reddish-brown precipitate in a solution of 1:20,000. Potassio-mercuric iodide, a precipitate in 1:10,000. Brominated potassium bromide, potassio-bismuth iodide, and iodised potassium iodide behave similarly. Gold chloride, phosphomolybdic acid, and phosphotungstic acid indicate aconitine in a solution of 1:5,000; picric acid in 1:4,000; and tannin and potassium nitrite in 1:2,000. An alcoholic solution of aconitine reduces silver nitrate, but its salts do not thus reduce the silver salt. Analysis of aconitine indicates the formula $C_{33}H_{47}NO_{12}$.—*Journ. Chem. Soc.*

DETECTION OF ROSANILINE.

WHEN solutions of rosaniline salts, or of these decolourised by means of sulphurous acid, are treated with acetone, an intense violet colouration is imparted to the acetone, which differs materially from the natural colour of the rosaniline. Messrs. Liebmann & Studer (*Journ. S. C. I.*, p. 287) propose to take advantage of this reaction for the detection of rosaniline salts in various substances, such as dye stuffs, wines, and lozenges. If cudbear is to be examined, a one per cent. decoction of it is to be treated with sulphurous acid, which precipitates the vegetable colouring. After filtration the solution is to be treated with acetone, when, after a few minutes, if magenta is present, the violet colour appears, which would not be the case with pure cudbear. One-fortieth per cent. of the aniline colours can be thus detected. Wines are evaporated to a tenth of their volume before being treated with sulphurous acid: 100 c.c. is a convenient quantity to take. After evaporation sulphurous acid is added, then lead acetate to precipitate the natural colour, although this is not absolutely necessary. Then proceed as in the case of cudbear. The same details may be followed for lozenges or any other substance in which it is desired to prove the presence, or otherwise, of rosaniline salts. In the same journal Mr. T. Fairley proposes another method for the detection of aniline colours in dye stuffs. The anilines are insoluble in strong ammonia solution; the vegetable colours are. He therefore treats the dye-stuff with ammonia until the colour is removed, then with alcohol, which dissolves the aniline colour and affords visible proof of its presence.

A NEW SUBSTANCE FOR THICKENING LUBRICATING OILS has, according to Dr. L. Marquardt, been found in aluminium oleate, a solution of which in mineral oils is sold as "liquid gelatin," though it contains not a trace of gelatin. This adulterating agent during use separates out from mineral oil, especially if it comes in contact with water. The aluminium oleate can be recognised by separating the fatty acids with dilute hydrochloric acid and saponifying with soda-lye, and also by determining the ash. In pure mineral oils the ash does not exceed 0.058 per cent.—*Zeitschr. f. Anal. Chemie.*

HUAMANRIPA has been described in *Nouveaux Remèdes*, May 1, 1883, by M. Bignon, pharmacist and professor of chemistry at Lima. It is a plant of the Symplocaceae family growing on the slopes of the Andes at altitudes of 12,000 to 18,000 feet. Raimondi has given it the name of *Cryptochaetes andicola*. It is not very abundant. It is an aromatic resinous plant, and is regarded as a valuable remedy in bronchial complaints, and is used by the Indians in all such affections. It is given in the form of an infusion, 25 grammes being infused in 1,000 grammes of water.

THE LEAVES OF *PODOPHYLLUM PELTATUM* have been examined by a student of the Wisconsin School of Pharmacy with a view of determining whether or not they possess the same active principles as the rhizome. No alkaloid, either fixed or volatile, was found, but a small quantity of a volatile acid which proved to be acetic acid. The percentage of resin obtained by precipitating the alcoholic tincture in acidulated water amounted to six per cent., which contained a considerable portion of a soft resin and did not possess such active medicinal properties as the resin obtained from the rhizome.

ANDERJOU, or Anderjoa, or Indurjao is the seed of the *Holarrhena antidysenterica* described by Waring ("Pharm. of India," 1868, p. 137). Its bark was formerly imported into Europe under the name of *Codaja pala*, pala bark, and Tellichery bark. It seems to have fallen into discredit in consequence of being mixed with barks of other species. But it is still used very extensively in the island of Mauritius as an anti-dysenteric remedy, especially in the form known as "remède Mauvis." According to information given in the *Bulletin de la Société médicale de l'île Maurice*, this remedy is prepared as follows:—Take one pound of anderjou, clean, dry, and crush it. Take twenty spoonfuls of this powder and mix intimately one spoonful of a combination of roasted anderjou with arrowroot. Divide into doses of about 6 drachms each and take one daily, infused in about 16 ozs. of water.

* A. JÜRGENS, in *Arch. Pharm.* [3], 24, 127-128, 172.

THE SOCIETY OF CHEMICAL INDUSTRY.

ANNUAL MEETING, LIVERPOOL, JULY 14 AND 15.

THE Sixth Annual Meeting of the Society of Chemical Industry was held on Wednesday, 14th inst., in the new Chemical Lecture Theatre of University College. The meeting was called to order at 11.10 by the Chairman, Mr. E. K. Muspratt, who was supported by the President-elect, Mr. David Howard, a man too well known to our readers to need any comment, and by Vice-Presidents Sir Henry Roscoe and I. Levinstein. The minutes of the previous meeting having been read and confirmed, the report of the Council was brought up. From this it appeared that the numerical strength of the Society was well sustained, being now upwards of 2,500. The death-roll of the year included the names of Walter Weldon, who died because he could not, would not rest; and Henry Sugden Evans, whose work and death we lately noticed. Alterations in by-laws, of which an advance of the subscription to 25s., and the withholding of the Journal from members who may be in arrear, were the only important items, closed an uneventful and therefore happy record.

The Treasurer's financial statement having been passed, scrutineers were appointed to superintend the ballot for the incoming Council. At this juncture a pleasant little relief to the somewhat monotonous formality of the proceedings came in. The gentleman who on such occasions always "wants to know" rose in his most solemn manner, and, shaking a grim paper at the astounded President, demanded whether it had his sanction. Quickly recovering, Mr. Muspratt cautiously asked what the document might be, received it, read it, and disowned it. Mr. Howard, as Chairman of the London section, was equally innocent. What could be the conspiracy? A familiar voice is heard, "Mr. President!" and up jumps Mr. Thomas Tyrer, the popular London secretary. Very solemnly he begins to take all the blame and responsibility, but this is soon seen through, and when after a rhetorical war-dance around the victim he pulverises him by reading the mysterious circular, which is found to be a kindly reminder to the London members of the dates of the meeting, the trains, the London candidates for election, the excursions, &c., a laugh goes round. Two minutes afterwards, Mr. Tyrer is to be seen characteristically busy hobnobbing with his querist.

The President's address took the form of an historical review of the alkali trade, the staple manufacture of this district. Although this subject was so fully and ably treated by the late Mr. Weldon at Newcastle in 1884, yet Mr. Muspratt was enabled by his family and business experience to throw much light upon the rise, progress, and position of this great industry, which Lord Beaconsfield declared to be the barometer of British trade. It was a former President of the Society of Chemical Industry, by-the-by, who put his lordship up to that remark. Except for the development of the ammonia-soda process of Solvay, he declared it to have been improved and advanced almost entirely by improvements in apparatus as contrasted with principles of manufacture. Curious and interesting detailed statistics were given of olden prices, costs, and production as against those of to-day. The present depressed condition of the trade was reviewed, the unhappy Le Blanc makers were once more informed that there was no hope for them, because behind the ammonia-soda makers lay not only M. Péchiney (of whom and whose process nothing recent has been heard), but also the more dangerous foe, the "combination process" of Messrs. Parnell & Simpson (see THE CHEMIST AND DRUGGIST, May 29, 1886, p. 490), of which the only defect was said to be that it would increase the yield of alkali by 25 per cent.

A vote of thanks for the address was, upon the motion of Mr. David Howard, seconded by Sir Henry Roscoe, accorded to the President, and Mr. E. C. C. Stanford having, in a racy and telling little speech, extended a cordial invitation to the Society to hold its next annual meeting in Glasgow, that place was duly appointed.

The election of officers—Mr. David Howard to be President—for the ensuing year having been declared, and the usual complimentary votes of thanks having been passed, the proceedings closed, and the majority of the members ad-

joined to the "Shipperies" Exhibition, which was officially announced as the excursion of the day.

The new Council consists of the following gentlemen:—

PRESIDENT.

David Howard, chemical manufacturer, London.

VICE-PRESIDENTS.

Sir I. Lowthian Bell, Bart., F.R.S., ironmaster, Northallerton.

Professor James Dewar, F.R.S., professor of chemistry and physics, Cambridge.

Dr. Peter Griess, F.R.S., brewers' and research chemist, Burton-on-Trent.

Dr. Ferdinand Harter, chemical manufacturer, Widnes.

E. K. Muspratt, chemical manufacturer, Liverpool.

Dr. W. H. Perkin, F.R.S., organic and research chemist, London.

Sir H. E. Roscoe, F.R.S., professor of chemistry, Manchester.

John Spiller, aniline dye manufacturer, London.

E. C. C. Stanford, chemical manufacturer, Glasgow.

J. C. Stevenson, chemical manufacturer, South Shields.

John Williams, chemical manufacturer, London.

Philip Worsley, chemical manufacturer, Bristol.

MEMBERS OF COUNCIL.

John Calderwood, F.R.S.E., Technical Director of Price's Patent Candle Company, London.

Eustace Carey, chemical manufacturer, Widnes.

R. Forbes Carpenter, Inspector under Alkali Act, Manchester.

Henry Denton, potter, London.

Dr. John Evans, F.R.S., paper maker, Hemel Hempstead.

S. H. Johnson, chemical engineer, London.

Ivan Levinstein, aniline dye manufacturer, Manchester.

John Pattinson, analytical chemist, Newcastle.

S. A. Sailer, dye manufacturer, Middlesbrough-on-Tees.

Sir B. Samuelson, Bart., civil engineer, London.

Sir Charles Tennant, Bart., chemical manufacturer, Glasgow.

Lewis T. Wright, gas engineer, Nottingham.

TREASURER.

E. Rider Cook, soap maker, London.

FOREIGN SECRETARY.

Ludwig Mond, chemical manufacturer, Northwich.

REPORT OF THE COUNCIL (ABBREVIATED).

The Society of Chemical Industry now contains 2,271 members, residing in or near the following districts:—London, 642; Liverpool, 184; Manchester, 312; Newcastle, 120; Birmingham, 112; Glasgow, 251; Bristol, 73; Nottingham, 75; Yorkshire, 121; Ireland, 30; and parts of England and Wales not included in any of the above, 115; United States and Canada, 96; other countries, 140. Since the last annual meeting 266 members have been elected, and 86 have been lost by death and other causes, making a net gain of 180 members.

Among the names of those who have died, that of our late President, Mr. Walter Weldon, F.R.S., who passed away somewhat suddenly on the 20th of last September, stands foremost. His services to the Society were so important, and must be so fresh in the minds of all its members, as to render an extended reference to them here superfluous. In him chemical industry has lost a most devoted servant, and one whose place it will be difficult to fill. During his year of office he had expressed an intention of leaving to the Society his collection of scientific, technical, and chemical works. Death came upon him too suddenly to enable him to effect this disposition in writing; but his son, Mr. Raphael Weldon, has, nevertheless, agreed to fulfil his father's known intention. The Society thus becomes possessed of a thousand or more valuable works, which will form the nucleus of a reference library.

Other noteworthy losses are Mr. H. S. Evans, Chief Analyst of the Dominion of Canada, and formerly President of the Pharmaceutical Society; and Mr. Alfred Tribe, Professor of Chemistry at Dulwich College, who was well known for his researches on the zinc copper couple.

The Council has received no applications for its consent to the formation of new sections during the year; at the same time the increasing number of members in Yorkshire encourages the belief that at no distant period of time a section will be in operation in that district. Members residing in and near Edinburgh have now resolved to form a joint section

with those at Glasgow; and in future the united body is to be known as the "Glasgow and Scotland" section, due provision being made for the representation of the East of Scotland on the committee.

Original papers read before the various sections show an increase upon the seventy-one recorded last year. Manchester heads the list with 18, Glasgow 17, London 16, Birmingham 7, Liverpool and Newcastle 6 each, and Nottingham and Bristol 5 each; making, with the two read before the last annual meeting, a total of 82. To their authors, as well as to those officers of sections whose zeal has elicited so much valuable information, the best thanks of the Society are due.

The Journal continues to maintain its position, and affords evidence of progress.

The Council has to ask the approval of the members to certain alterations in the by-laws. The most important deals with the subscription. Three alternative propositions have been before the Council—viz., the imposition of an entrance fee, the raising of the subscription to 30s., and the raising of the subscription to 25s. It has been resolved to recommend the last of these alternatives. The reasons which have guided the Council in their resolve to ask for increased support are the following:—For several years the balance between receipts and expenditure has shown either a deficit or so narrow a surplus as to leave no margin for contingencies. This is due mainly to the cost above referred to of producing the Journal, but also in some degree to the subventions granted to sections, the levy of a special local subscription having been found impracticable. The amount which has been paid for sectional expenses during the past session has been 207*l.* 12*s.* 9*d.*, equal to an average cost of 2*s.* 6*d.* per head for the members of the various sections. Another proposed alteration will give the Council power to withhold the Journal from any member until his subscription for the current year has been paid. This plan is adopted by other societies with good results.

In conclusion, the Council expresses a hope that the existing depression among the chemical industries may soon pass away, and that the work which this Society has been formed to achieve may bear fruit in the shape of increased prosperity to existing industries and the establishment of new manufactures.

ADDRESS BY THE PRESIDENT, E. K. MUSPRATT, ESQ.

History of the Alkali Trade.

ON behalf of the local section, I have to welcome the members of the Society to Liverpool, the principal commercial centre of the large chemical industries of this country, and in connection with Manchester the birthplace of the Society itself.

More than 50 years ago Liverpool contained several soap and glass work, and here the manufacture of alkali was first carried out on a large scale, but the town itself has long ceased to be the principal seat of these manufactures, which have migrated to the neighbouring towns of St. Helens, Widnes, Runcorn, and Flint, and, together with large works for the extraction and smelting of copper, form the staple industry of this portion of the county of Lancashire.

After some reference to the scope of the work carried on by the Society, the President said: It has been the custom of my predecessors in the office of President to devote the greater portion of their address to the history and progress of one special industry connected with the district in which the annual meeting is held. I am, however, in this unfortunate position, that the principal chemical industry with which I am specially identified formed the subject of the eloquent address at Newcastle of the late Mr. W. Weldon, whose loss this Society and the chemical world continue to deplore. I cannot emulate the eloquence of one who, in addition to his connection with the soda industry, was also a literary artist; nor can I pretend to the same intimate acquaintance with the various new processes and the recent development of the manufacture of alkali.

I have thought, however, that it will not be uninteresting to the members of the Society if in this city of Liverpool I endeavour to trace the history and development of the manufacture of alkali, including that of sulphuric acid, hydrochloric acid, and the production of copper, which are essentially connected the one with the other, and have been

enormously increased and improved by the introduction of the Leblanc process for making alkali from common salt by my father in 1823, within two miles of this building.

The economical success of the manufacture of artificial soda depends on the cheapness of the raw materials and the perfection of the chemical and mechanical operations by means of which the final result is obtained.

The neighbourhood of Liverpool, in close proximity to extensive coalfields and salt deposits, and with a port in direct communication with the countries whence are derived the raw materials—sulphur, pyrites, and nitrate of soda—was well fitted to be the cradle of the manufacture, and notwithstanding the rivalry of Newcastle and Glasgow, still retains its pre-eminence. When we consider that, with the exception of sulphur, the prices of the several raw materials are not materially different from what they were fifty years ago, great improvements must have been made in the chemical operations to enable the manufacturer to sell soda ash at present prices, even taking into consideration the aid afforded by the increased consumption of the chlorine products.

The first chemical operation in an alkali works is the production of sulphuric acid. In or about the year 1823 the cost of producing this acid was, as far as I have been able to ascertain, about 3*l.* 10*s.* per ton of acid 140° Tw.; at the present time the cost is about 25*s.* or 20*s.* per ton.

I shall now review briefly the means by which this economy of production has been obtained.

Attempts have often been made to supersede the costly leaden chambers by more economical structures, without success, but improvements have been made in the mode of construction of the plant, and a cheaper sort of sulphur has been found in the cupreous pyrites of Spain and Portugal. The actual process followed is essentially the same as that first applied by Dr. Roebuck in 1746, converting the sulphur into sulphurous acid, at the expense of the oxygen of the air, and by the intervention of a nitrous compound for a further oxidation to sulphuric acid. The most important improvements have been the substitution of pyrites for sulphur, and the economy of nitrate of soda and fuel by means of the Gay Lussac absorbing column and the Glover tower. M. Scheurer Kestner in a recent publication asserts that the first successful use of pyrites was due to M. Perrel, in 1833, but long before pyrites, obtained from his mines in Anglesca, was used in Liverpool by Mr. Hill. It was, however, the suicidal policy of the King of Naples in granting a monopoly of the trade in Sicilian sulphur to a French firm, which raised the price of sulphur from 5*l.* or 6*l.* per ton to 12*l.* and 14*l.* per ton, that roused the English manufacturers to seek a substitute, which they found in the Wicklow and Welsh pyrites, and it was in this neighbourhood it was first used on a large scale, for in the years 1839 and 1840 large quantities were burnt by my father at his works at Liverpool and Newton.

As some of the pyrites contained copper, the residue, after burning, was delivered to the Sutton Copper Company, at St. Helens, so the utilisation of the copper in the pyrites was attempted at its first introduction.

The use of Irish pyrites in place of sulphur was soon generally adopted by alkali makers in the Lancashire district, but sulphur still continued to be used on the Tyne, and so late as in the year 1852 we find 7,580 tons of sulphur consumed in that district, when none was used in Lancashire.

Many difficulties were met with in the use of pyrites, and when the price of sulphur fell to 5*l.* per ton, it was a disputed point among alkali makers whether at that price it was not more economical than Irish pyrites at about 25*s.* per ton.

Sulphur could be readily burned on an iron plate, and although the admission of the necessary quantity of air to support combustion without admitting at the same time an excess presented some difficulties, this was comparatively easily regulated. With Irish pyrites, however, containing only about 32 per cent. of sulphur combined with iron, sufficient air had to be admitted not only to burn the sulphur, but also to oxidise the iron; and, as a consequence, the constitution of the gases entering the chamber was very irregular, and much larger chamber space was required than was necessary when using sulphur.

Pyrites smalls presented another difficulty—shelf burners were not invented—and to facilitate their burning in an ordinary kiln, the smalls were mixed with clay and shaped

into balls and dried, but the combustion was usually imperfect, and from 5 to 10 per cent. of sulphur was left in the residue. I have already mentioned that some of the ore, and particularly the smalls, contained copper, and large quantities were burnt and afterwards treated for copper in the ordinary smelting furnace, so long as the copper contents were sufficient to render the operation remunerative. It was found, however, that the percentage of copper decreased, and much of the ore contained less than 1 per cent. of copper, which was not profitable to smelt, and the residues were thrown away and accumulated in large heaps, until in the year 1850 Mr. Gossage purchased for a nominal sum large quantities of these residues, and smelted them to a regulus both at Widnes and Newcastle. This regulus was sold to Messrs. Vivian & Sons, of Swansea, who at that time were able to pay a higher price than the copper contents alone would have warranted on account of the silver therein contained, and which they extracted, I believe, by the Augustin or Zierooel process.

In the year 1859 pyrites from Spain and Portugal was first introduced into this country and burnt by alkali makers on a large scale. This pyrites, containing about $2\frac{1}{2}$ to 3 per cent. of copper, was very suitable as a flux for smelting when mixed with other ore, and large quantities of the burnt ore were delivered to the copper works at St. Helens and Widnes, but the price obtained was not sufficient to materially reduce the price of the sulphur to the alkali manufacturer, as the quantity required as a flux with the ores was limited, and the smelting of the residue by itself was unprofitable. The assay of copper ores by the Cornish assayers also militated very much against the general use of these ores, for the production of sulphuric acid and non-cupreous ores of very fine quality, testing about 40 to 45 per cent., were also introduced from Norway and Belgium, and these for a time competed successfully with the cupreous ores. I have not been able to obtain full statistics of the imports of foreign pyrites into the United Kingdom for the first ten years of their introduction, but the imports into the Mersey rose from 26,641 tons in 1859 to 133,864 in 1859.

Statistics were given showing a nearly regular progression of imports of pyrites into the Mersey up to 1885, when 253,146 tons were received there. This quantity was slightly exceeded in 1882, but the total import for the United Kingdom in 1885 (654,521 tons) was larger than in any previous year.

In the year 1871 about 100,000 tons of the non-cupreous ore also was imported and consumed, but this gradually fell off as the extraction of copper increased. The great aim of the alkali manufacturer was to obtain the sulphur at the lowest possible price; but as I have before explained, the intricacies of the copper assay left him very much in the hands of the copper smelter, and the increased consumption of the ore gradually raised the price directly or indirectly, until a combination of alkali makers acquired the Tharsis mines, together with Mr. Henderson's patent rights for the extraction of copper by calcination of the ore with common salt, and subsequent lixiviation of the calcined mass and precipitation of the copper by iron. The calcination was conducted in a close furnace, the HCl evolved, and the copper volatilised being condensed in the usual manner, and used for the lixiviation of the roasted ores. The process itself does not differ materially from Mr. Longmaid's, to which I shall refer later, but to Mr. Henderson is due the credit of discovering the suitability of this method for the treatment of the burnt Spanish ores in the market.

The process when first applied to the burnt Irish ores was not very remunerative, but with the burnt ore from Spanish and Portuguese ores the oxide of iron or purple ore left after lixiviation found a ready sale, and practically paid for the cost of extraction, leaving the difference between the quantity of copper yielded by the wet and dry assay as profit on the operation. By the introduction of this wet extraction process, the sulphuric acid manufacturer was freed from depending on the copper smelter, and the price of sulphur was reduced owing to the competition of the various pyrites companies.

This lasted till 1879, when the three large companies combined to fix the price of pyrites, and since that time until the combination was broken up by the Tharsis Company in 1885, with a view to enable the alkali manufacturers to compete with the ammonia-soda process, the price of sulphur has always been a source of great anxiety. The course of the

price of sulphur to the alkali manufacturer may be seen from the following tables:—

Prices obtained in the Liverpool District for Pyrites from January 1, 1861.—When Sold for Sulphur only.

		Net Cost to Alkali Works per unit of Sulphur d.			Net Cost to Alkali Works per unit of Sulphur d.
1861	..	10.85	1872	..	7½
1862	..	9.625	1873	..	7½
1863	..	8	1872. Small lot of Pyrites sold also at 10d.		
1865	..	9	1876	..	5½
January 1866	..	9½	First appearance of Rio Tinto Co.		
Tharsis Company formed			1877	..	4½
March 1866	..	11.02	1878	..	..
January 1868	..	10.04	January 1879	..	5½
June 1868	..	9½	to		
October 1868	..	8	December 1884	..	..
January 1869	..	7	1879/81. Combination of Pyrites Cos.		
June 1869	..	8	1885	..	3 to 3½
1870	..	6½	to		
1d. allowance was made this year on some small parcels charged by Masons at 7d.			1887	..	..
1871	..	7½	Combination ceased.		

When Sold for both Values.

From	Price per 21 cwt., allowing moisture and draft
Jan. 1, 1861	60s. for sulphur and 2 per cent. copper. Excess copper 17s. 6d. per unit
Sept. 1, 1861	55s. for sulphur and 2 per cent. copper. Excess copper, 2s. per ½
Dec. 1, 1863	46s. 6d. for sulphur and 2 per cent. copper. Excess copper, 2s. per ½
Jan. 1, 1865	50s. for sulphur and 2 per cent. copper. Excess copper, 2s. per ½, and 20s. for sulphur and Swansea price. R.C. 45s. for copper
Oct. 1, 1865	52s. 6d. for sulphur and 2 per cent. copper. Excess copper, 1s. 9d. per ½
Jan. 1, 1866	55s. for sulphur and 2 per cent. copper. Excess copper, 1s. 9d. per ½
Mar. 1, 1866	65s. for sulphur and 2 per cent. copper. Excess copper, 1s. 9d. per ½
Oct. 1, 1868	28s. 7d. (1d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1869	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
June 20, 1869	23s. 7d. (7d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Mar. 1, 1870	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1871	23s. 7d. (1d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1872	32s. 8d. (8d. per unit) for sulphur and Swansea price. R.C. 45s. for copper; and 36s. 9d. (9d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1873	36s. 9d. (9½d. per unit) for sulphur and Swansea price. R.C. 45s. for copper; and 40s. (9½d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
July 1, 1874	36s. 9d. (9½d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1875	33s. 8½d. (8½d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1876	22s. 5½d. (5½d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1877	20s. 5d. (5d. per unit) for sulphur and Swansea price. R.C. 45s. for copper
Jan. 1, 1879	24s. 6d. (2d. per unit) for sulphur and Swansea price. R.C. 41s. for copper
Jan. 1, 1880	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 40s. and 37s. 6d. for copper
Jan. 1, 1881	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 40s. and 37s. 6d. for copper
Jan. 1, 1882	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 40s. for copper
Jan. 1, 1883	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 40s. for copper
Jan. 1, 1884	24s. 6d. (6d. per unit) for sulphur and Swansea price. R.C. 46s. for copper
1885, '86, and '87	18s. 4½d. (4½d. per unit) for sulphur and Swansea price. R.C. 38s. based on Chili Bars

The effect of these improvements in copper extraction has been to bind more closely together the manufacture of alkali with the production of copper, sometimes by the same firm, or, as in the case of the Tharsis Company, by the shares in the copper company being largely held by alkali makers. I shall, later on, trace the progress and improvement in the copper extraction, and now return to the use of pyrites in the production of sulphuric acid. The chemical process in the sulphuric-acid chambers was by no means as regular as could be desired, even when burning sulphur; but with

pyrites, for the reasons already given, the irregularity was still greater, and as a consequence the production of sulphuric acid showed a result considerably below what was theoretically possible, and the quantity of pyrites and nitre used to produce a ton of sulphuric acid differed in various works from 10° to 20°. In his letters on Chemistry, which appeared in 1851, if not in his earlier letters, Liebig says, speaking of the process of making sulphuric acid:—"As regards the process and the apparatus, this manufacture has reached its acmé, scarcely is either susceptible of improvement;" but to those practically acquainted with the manufacture and with the immense improvement since that date this statement must appear extravagant. Liebig was, no doubt, misled by reports of very careful working with sulphur and enormous chamber space.

The introduction of Gay-Lussac's system for the absorption of the nitrous fumes escaping from the chambers was the first great improvement in the conduct of the chemical operation. In this system the exit gases of the chambers pass up a tower filled with coke, down which percolates a stream of concentrated sulphuric acid, by means of which the nitrous gases are absorbed. By diluting this nitrous vitriol and heating with steam, the nitrous gas is returned to the chambers. This system was first adopted at the St. Gobain Works in France in the year 1842, with a saving of fifty per cent. of the nitrate of soda used; but, notwithstanding this saving, after it had been introduced into several works in this neighbourhood, it was subsequently abandoned, partly on account of the great wear and tear on the apparatus employed, and partly because when working with Irish pyrites the exit gases were so diluted by air as to render the absorption comparatively difficult. The use of the richer Spanish ores since 1859, which rendered the composition of the gases leaving the chambers more regular, and Mr. Glover's improvements in the concentration and denitration of the sulphuric acid brought about the general adoption of the Gay-Lussac absorbing column. It is clear that Gay-Lussac's invention was incomplete, and at an early date (about the year 1843) experiments were made at our works in Liverpool to concentrate the sulphuric acid by means of the sulphurous gas from the pyrites kilns; but the tower through which the gas passed, and which was filled with coke, took fire owing to the carelessness on the part of the workmen, and the attempt was abandoned. To Mr. Glover is due the merit of having successfully constructed an apparatus by means of which the nitrous vitriol is denitrated and the sulphuric acid sufficiently concentrated for use in absorbing the nitrous gas in the Gay-Lussac column. With this invention the apparatus for producing sulphuric acid in leaden chambers is complete, but the present perfection of working has only been attained by the application of trained chemists to the study of the process, and the introduction of apparatus for the accurate but rapid estimation of the constituents of the gases entering and leaving the chambers. Much of this work has been done in Germany, and by the investigations of Winkler, Weher, Schwarzenberg, and others, we have a much clearer idea of the reactions which take place in the chambers and absorbing columns than formerly. Dr. Hurter's paper on the dynamic theory of the manufacture of sulphuric acid, read before the Liverpool section of this Society in 1882, seems finally to have placed the operation on a thoroughly scientific footing. Orsat's apparatus for gas analysis and the nitrometer enable the manufacturer to control the working of his chambers in a very different way to that in use in the best works thirty years ago, where the colour of escaping gas on coming in contact with the air, or the use of the nose, served as an indication of how the reaction was proceeding. For the past ten years no important improvement in the manufacture has taken place, nor can we expect any, since with good apparatus the loss of sulphur escaping is reduced below 1 per cent., with a consumption of nitre of less than 2 per cent. on the sulphur burnt. In order to treat the large quantities of burnt pyrites furnished by the alkali manufacturers, large extracting works were erected in this neighbourhood and on the Tyne, and the quantity of copper extracted greatly exceeds the aggregate production from the copper mines of the United Kingdom. [The copper obtained from mines in 1884 was 3,350 tons, from pyrites 15,200 tons.]

It had long been known that the copper precipitate produced from the Spanish and Portuguese ores contained both

silver and gold, but as the amount of silver present in the burnt ore was exceedingly small (and even the whole of this small quantity is not obtained in solution), a simple and expeditious method was necessary, if its extraction could be made remunerative. In the year 1870 Mr. Claudet introduced his beautiful process at the works of the Widnes Metal Co., and since then about 2,500,000 oz. of silver and 11,965 oz. of gold have been extracted from the burnt pyrites, as is shown by the following table, for which I am indebted to Mr. Claudet:—

					Silver	Gold
					Oz.	Oz.
1870 to 1879	..	..	..	..	492,727	1,925.6
1880	..	..	..	..	266,581	1,047.6
1881	..	..	..	..	258,463	1,489.8
1882	..	..	..	..	377,189	1,518.9
1883	..	..	..	..	356,349	1,932.2
To January 31, 1884					1,691,709	7,965.1
Estimated 1824 and 1835					800,000	4,000
					2,491,709	11,965

This process is based on the precipitation of the silver from the copper liquors by means of a soluble iodide, the precipitate consists of silver iodide together with lead sulphate and chloride and sub-salts of copper. These last are removed by washing with diluted HCl, and the precipitate is then decomposed by metallic zinc, which completely reduces the silver iodide, and the resulting zinc iodide is used over again to precipitate further quantities of silver.

Where the pyrites residues are thus treated, it will be seen that all the constituents of the pyrites are practically made available: the sulphur for the production of sulphuric acid, and the iron, copper, silver, and gold in the extracting works.

Unfortunately all the salt used in the calcination process, amounting to over 20,000 tons per annum, is at present lost, and is run away as sodium sulphate in the waste liquors.

This drainage from the extracting works, coming in contact with the chloride of calcium, the waste liquor from the Weldon process in alkali works, deposits large quantities of gypsum, obstructing the drainage, which gave rise to a long and expensive lawsuit in the Widnes district.

To avoid this nuisance, the liquors were for a time evaporated and calcined, and the sulphate of soda, together with a small quantity of ferric oxide, were obtained in a marketable form, but the high price of fuel rendered all these processes unremunerative.

(To be continued.)

Miscellaneous.

AT THE COUNTER—"I say, Gov'nor, how do yer sell ammunition?" "What's up, then? Are you going to enlist as a soldier?" "No; that's what my girl told me to get for the baby; it is sold in boxes." "Is it fuller's earth or violet powder? How are you going to use it?" "If you give me the world I couldn't tell you." "Was it magnesias?" "Hi, that's it; I am glad you thought of that. Well, there is no difference, is there? Give us a penn'orth."

ONE day this week the following order was given in at a first-class pharmacy in the north of London—

- 1 cz. nitro-glycerine lozenges.
- 1 " bismuth "
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The first item was not supplied.

"MAN, ye might gie me a pennyworth o' something. I dinna ken the name o't, an' I forget what it's for; but ye'll ken yersel."



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Of all Chemists and Mineral Water Dealers. [2]

SEE SEABURY & JOHNSON'S Advertisement of INDIA-RUBBER POROUS AND SPREAD PLASTERS on page 23.

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SEE ADVERTISEMENT, PAGE 24.

MUMFORD'S PURE CRUSHED LINSEED

18s. per cwt. net, bag included: in 7, 14, 28, 56 lbs. 20s. per cwt., delivered free in London, and in 1 lb. tins, 5s. per doz. BEST QUALITY; NO OIL EXTRACTED. Carefully cleaned and ground so as to retain the natural colour of the Seed without being heated. [2]

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EDITORIAL NOTES.

BURYING THE BY-LAWS.

WE said in February last, when we published the reply of the Privy Council to the Pharmaceutical Council's proposal of new by-laws, that "as far as this generation is concerned the chance of establishing a compulsory curriculum for pharmaceutical students is as dead as the Druids," and we urged pharmaceutical statesmen to recognise that fact and save valuable time in future by abandoning their fantastic schemes for the re-organisation of pharmaceutical education there and then. We cannot wonder, however, that they were reluctant to take this advice, and slow of heart to believe it possible that the Privy Council could question the wisdom and the legality of the decision which they had arrived at, after years of discussion. The Privy Council told them that "by-laws which impose any precedent conditions upon persons who tender themselves for examination under the provisions of the Pharmacy Act, 1868, are contrary to section vi. of that Act." We do not claim any exceptional perspicuity when we say that we were able to comprehend at once the meaning of that very explicit sentence. To the Pharmaceutical Council, however, the expression of opinion was a little obscure; they chose to find some ambiguity suggested by the clause which followed:—"This observation does not apply to reasonable regulations for securing order and efficiency in the examination itself, or for enabling the examiners to have proper material before them upon which they can be satisfied as to the qualifications of the persons examined before they grant the certificates, provided that such regulations do not prevent free access to the examinations." Six weeks after receiving this stunning blow the President summoned up courage enough (we use the word courage out of politeness) to ask the Privy Council whether they might construe this clause as making it competent for the examiners by any regulation to require evidence of (say) a three months' course of instruction in chemistry, or to require a candidate failing to satisfy the examiners in any subject to attend a course of lectures on the subject before he presents himself a second time, or to impose any precedent condition whatever on a candidate tendering himself for examination.

There could be no doubt about the nature of the Privy Council's reply to such a question, but it may be as well to quote the exact words in which that reply was couched:—

"The Lord President is advised that it would *not* be competent for that Board so to require.

"The words of the paragraph in question were intended to express that the examinations should be of such a character as to enable the examiners to satisfy themselves of the practical skill, knowledge and qualifications of the candidates, and for these purposes they might require practical tests to be submitted to the candidates."

This, as Mr. Carteighe said, removes any possible ambiguity from the previous letter, and the Pharmaceutical Council at their last meeting resolved, on the recommendation of their Committee, to abandon their hope of effecting changes in the training and examination of candidates by means of by-laws. Mr. Schacht naturally enough recorded the pain he felt at seeing his pretty balloon burst and vanish, while Mr. Atkins more cheerfully, but with a less accurate perception, adopted the usual boast of defeated reformers, which it would be unkind to grudge them, and declared that victory was only deferred, that their labour could not have been lost, that they

were only paying the usual penalty of being in advance of their age.

Setting poetry aside, however, it is a fact that the four years' discussions and the floods of talk and writing which were associated with this subject have been absolutely lost, and, we should say, wasted. There always was an almost palpable certainty that the Privy Council would not sanction the scheme. Mysterious professions of knowing something more than ordinary mortals could know were, however, circulated; but these, it seems, were as flimsy as the stable secrets of the professional tipster. As for the scheme itself, we do not know that there is much to weep about over its burial. It would have been of some use if it would have checked the entrance of new men into pharmacy, but nobody dared to openly recommend the scheme for this reason. For the rest, it is pretty obvious that our pharmacists as a body are deficient rather in commercial habits than in scholastic or scientific lore, and such effect as the compulsory curriculum would have had would be in favour of the latter rather than of the former qualifications. It is, however, recognised everywhere now that the subject is removed from the region of practical pharmaceutical politics. It has had a decent burial, and may as well be forgotten as soon as convenient.

TWENTY YEARS OF PHARMACEUTICAL WORK.

WE frequently discuss the progress of chemistry, of therapeutics, of surgery, and of other branches of scientific work in which we cannot fail to be interested. But we seem to assume without discussion that pharmacy is a progressive art, and our leading orators and writers accept that view of the situation with perfect complacency.

We do not ourselves doubt this assumption; we see hundreds of earnest pharmacists in all civilised countries working patiently for their profession, and we fully believe in the productiveness of all genuine labour. But we confess it would be difficult to prove that pharmacy has progressed to an extent commensurate with the apparent activity of its workers. The Executive Committee of the British Pharmaceutical Conference have just published an index to their whole series of year-books, which covers the work done expressly for the Conference from 1864 to 1885 inclusive, and the world's work reported in abstract in those year-books from 1870 to 1885. Roughly it may be said to present a condensed record of the labours of pharmacists for the past twenty years. That index covers 246 octavo pages, and at first sight seems to present a magnificent array of facts. And it does this; but it is a little sad to glance through the index and observe how infinitesimal is the proportion of the knowledge acquired which has been brought into practical service, and how small in amount progress in pure pharmacy bulks in the whole. Excluding pure therapeutics on the one hand, and purely scientific researches on the other, what lasting work has pharmacy done during the past twenty years? A glance through this index shows that American pharmacists hold the field for improvement of pharmaceutical processes and pharmaceutical preparations, and, presumably, in this department we are content to follow their lead, as these written records and our own advertisement pages show. Our new Pharmacopœia contains some thirty or more preparations, about one-half of which are Transatlantic in their origin, and there are but few instances of improvement in old preparations. We are slow to improve. There is no record here of Mr. Chesebrough's experiments in the production of vaseline; our pharmacists have not experimented on the same lines. Chlorodyne remains as deep a mystery as ever, and

palatable preparations of hypophosphites are beyond our ken. Parrish's syrup is still a trouble to us, our customers have to wait while the water boils for an infusion, unless we stretch our consciences a little and use what some call insipid concentrated preparations. Since 1864 no one has attempted to enlighten his fellow-pharmacists as to the manufacture of these convenient adjuncts. Why is this? Our pharmacopœial pills wander about coverless in their innocence, no pearl coat, gelatine film, or other covering to protect them or hide their imperfections. Elixirs and fluid extracts are here for our admiration, presumably not for officialising. Concentrated syrups are a strangeling, and percolation is in swaddling clothes. Where are the results of the twenty years' labour to be found? Therapeutists have contributed valuable and evidently permanent additions in chloral at the beginning, and cocaine at the end of the period. The production of these and other articles of less importance is due to private enterprise, and we would search here in vain for practicable working processes.

Where our workers have made the greatest impression is in chemistry and materia medica, and both of these have to a large extent gone hand-in-hand. Cinchona and its alkaloids have received the largest share of attention, but, unfortunately, much of what is recorded is controversial. We are no nearer the artificial production of quinine, and have still little to boast of regarding the purity of the natural alkaloid. But, in our knowledge of alkaloids, and their isolation, and in the number of these potent compounds, we are much richer now than we were twenty years ago. The number actually in use is not much larger, but what we do have are more extensively used, and this is undoubtedly due to better processes for their preparation and greater knowledge of their action. Here is promised a revolution in physic, but we anticipate less work for the pharmacist when these powerful drugs are the rule and not the exception. Is it desirable or possible to avert this consummation? May not improved and constant galenic preparations be equally acceptable to the therapist? We are able to determine the botanical origin and chemical composition of unknown or new drugs, why should we not extend our investigations further and produce from them acceptable and reliable pharmaceutical preparations? Surely our large army of workers, honourable and admirable as their labours are, are competent to perform the task, and to revise old methods and produce new processes.

There is one fact which is strikingly evident—pharmacists have during the past twenty years made a distinct bid for a scientific reputation outside of pharmacy. This is, in a sense, regrettable. It were much better that we had more scientific pharmacists amongst us, and fewer pharmaceutical scientists. Our leaders should let the scientific world take care of itself—it does not want pharmacy tacked on to it—and devote their energies to the advancement of pharmacy, pure and simple.

COMMERCIAL SULPHATE OF QUININE.

It appears to be the fate of pharmacists that they should occasionally be started into wakefulness regarding the purity of the drugs they handle. Fortunately the rude awakening seldom proceeds from without, it generally being the case that dwellers within the camp cause the commotion. Quite recently we have had a case in point in reference to the quality of European sulphate of quinine. Dr. de Vrij, the veteran quinologist, in a paper published in this Journal (May 1, page 378), stated that the quinine sulphate prepared by English, Dutch, French, and German manufacturers con-

tained cinchonidine sulphate varying in extent from 4.73 to 12.443 per cent. In this respect English quinine was placed in a bad position undoubtedly, but in respect of the fact that our home-made quinine contains much less water than that which comes from the Continent, its actual quinine content is greater than that of any other production. So far we take Dr. de Vrij's figures as they are given, for it is not our object in this note either to contradict or to defend them. A few days after the publication of the paper in question, Dr. de Vrij gave a *résumé* of it before the Paris Pharmaceutical Society (THE CHEMIST AND DRUGGIST, May 8, p. 404), and, as a result thereof, the Society at a subsequent meeting appointed a committee to experiment with the Codex test, which was impugned, and to check as far as possible Dr. de Vrij's alarming statements. The French Codex test is a modification of Kerner's test, a modification in so far as the exact temperature at which the test is to be performed has been unintentionally omitted. This test of Kerner's is an old one, comparatively, and has been adopted in the German as well as in the French Pharmacopœia, and, with slight modifications, in the United States Pharmacopœia. Its application is simple: 2 grammes of the quinine under examination are agitated and macerated in 20 c.c. of distilled water at 15° C. for half an hour; 5 c.c. of the solution are then filtered off and cautiously mixed with 7 c.c. of 10 per cent. solution of ammonia, when a clear solution should be obtained. The principle of the test is also simple; firstly the sulphate of quinine alone gives a precipitate soluble in excess of ammonia, or, more correctly speaking, in the ammonia and ammonium sulphate which is formed, and no other salt of quinine responds to the test. Secondly, cinchonidine sulphate—the body which the test is mainly designed to detect—is about six times more soluble in plain water than is quinine sulphate, consequently a small proportion is made apparent, and its hydrate, or ammonia precipitate, is quite insoluble in excess of the reagent; therefore by suitable means the insoluble alkaloid may be separated, weighed, and the percentage of cinchonidine so determined approximately. The French committee, in addition to working with this test, repeated the polariscopic test used by Dr. de Vrij, with the result, as stated in our last week's issue, that they reported through their convener, M. Jangfleisch, that commercial quinine sulphate contains 8, 10, 12, and sometimes as much as 16 per cent. of sulphate of cinchonidine. They also corroborate Dr. de Vrij in his statement that the light or bulky quinines contain most cinchonidine.

These facts are by no means new, and have been pointed out repeatedly by quinologists. Our own Pharmacopœia permits 5 per cent. of impurity in sulphate of quinine, and gives an excellent test whereby that, or a less or larger, amount may be detected and separated. Absolute purity, though obtainable, is not advisable or practicable, owing to the cost of producing a salt of the kind.

In the course of his statement before the Paris Society Dr. de Vrij mentioned another simple test, which is due to him, and which may be readily applied according to Mr. David Howard's modification.* It is as follows: Dissolve 10 parts of quinine sulphate in 9 parts of acid. sulph. dil. B. P., and 15 parts of water. Allow the acid sulphate of quinine to crystallise and drain off the mother liquor; wash the crystals with a little water and then shake the liquor with ether and ammonia. It is necessary to keep in mind when applying these tests that cinchonidine will be found; it is only as to its amount that a question arises, and on this point we have sufficient faith in our manufacturers to feel that retailers will be satisfied.

NAMES OF PLACES AS TRADE-MARKS.

VICE-CHANCELLOR BACON has very definitely laid down an interpretation of a delicate point which came before him in a recent trade-mark case. A well-known London perfumer had made for some years a preparation which he has called the "Melrose Favourite Hair Restorer." Now he wants to register that title as a trade-mark; that is, he wants to secure an exclusive right in the use of that combination of words. The Comptroller had declined to hand over to a London gentleman perpetual possession of the name Melrose in connection with hair restorers on the ground that a geographical title could not be considered a fancy word. The Vice-Chancellor, however, considers that, used in this connection, the name no longer retains its geographical signification, but becomes a purely fanciful definition.

This seems to us to be a rather dangerous doctrine. The Vice-Chancellor says: "No one could say that anybody in the village of Melrose could be injured by the applicant adopting the name." Perhaps not; but the applicant wants to do more than merely adopt the name: he wants to monopolise it in connection with hair restorers for ever. If it were certain that his complete title only formed his trade-mark there would not be much reason to complain; but we imagine he would regard a preparation entitled "Melrose Hair Restorer" as an infringement of his. The Vice-Chancellor says any inhabitant [of Melrose] can make Melrose horse-shoes as much as he likes. But we presume the Court would now grant to any one in London or elsewhere as a trade-mark the title "Melrose Horse-shoes"; then what about the rights of the inhabitants of that locality? Residents of Melrose, as we judge, are just the only people who would not be allowed to register either "Melrose Hair Restorer" or "Melrose Horse-shoes," because in their case the title would be descriptive; but a man who manufactures at 400 miles distance may legally name his article after Melrose, and get an exclusive right in the title for the rather ridiculous reason that the title does not mean what it says.

What is to prevent the extension of the principle thus established? Would any druggist be permitted to register the title "Mitcham Lavender" if he could only prove that the product in his case had never had any association whatever with the Surrey village? Or, might another grow poppies in his back garden and register the title "Turkey Opium" for some concoction got from them if he could only produce evidence of the absolutely inaccurate character of the description?

Obituary.

BROWN.—On July 8, Mr. William Brown, chemist and druggist, Newbiggin-by-the-Sea, aged 70 years. In addition to carrying on the business of a chemist, Mr. Brown for twenty years discharged the duties of postmaster, and he was also the agent of the North-Eastern Banking Company.

MCINTYRE.—At his residence, Tweedmouth Bridge End, Tweedmouth, on the 26th ult. Peter Slater McIntyre, pharmaceutical chemist, aged 63 years. The late Mr. McIntyre was in business in Tweedmouth for upwards of thirty years. He was amongst the first to pass the Major Examination for the title of Pharmaceutical Chemist. Previous to that he had studied medicine. He was much respected in Tweedmouth, and his funeral was of a semi-public nature, being attended by the members of St. David's Lodge of Freemasons, of which he was P.M. Mr. McIntyre leaves a widow and one son.

* CHEMIST AND DRUGGIST, 1885, p. 562.

Medical Cleanings.

BRITISH MEDICAL ASSOCIATION.

THE following is the programme, as far as arranged, for the section of therapeutics and pharmacology:—

An Introductory Presidential Address will be given by Dr. T. Lauder Brunton, F.R.S.

The following subjects have been selected for special discussions:—

1. Antipyretics; to be opened by Dr. Carter, of Liverpool.
2. Analgesics; to be opened by Dr. Spender, of Bath.
3. Action of Drugs in Albuminuria; to be opened by Dr. Saundby, of Birmingham.

The following papers are promised:—

Bruce, Mitchell, M.D. Morphine in Diabetes.
Drysdale, Charles R., M.D. Mercury as an Antidote in Syphilis.

Granville, Mortimer, M.D. The Relief of Pain by Mechanical Vibration or Percussion.

Handford, H., M.D., Nottingham. The Pathology of a rare Form of Skin-disease affecting the Sebaceous Follicles.

Jessop, W. H., M.D. On the Therapeutic Effects of Cocaine in Ophthalmic Practice.

Mackey, E., M.D. Resorcin in Gastric and Cutaneous Disorders.

Mackenzie, Stephen, M.D. On the Value of Cannabis Indica in a Certain Class of Headaches.

St. George, George, Esq., Lisburn. Experiments with Manaca in the Treatment of Rheumatism.

Stone, W. H., M.D., will show the apparatus exhibited by him on the occasion of his Lumleian Lectures.

Strahan, J., M.D. An Unrecorded Danger from Continued Large Doses of Iron.

BORIC ACID IN MOUTH AFFECTIONS.

DR. A. D. MACGRIGOR (Kirkcaldy) communicates a practical and unpretentious paper on this subject to the *British Medical Journal* of last week. Borax has long been a favourite household remedy for several mouth affections in children, such as *thrush*, the preparation employed being borax and honey, which always contains free boric acid, as explained by Professor Dunstan. This preparation is not so good, according to Dr. Macgrigor, as one made with borax and boric acid. The confection should be painted over the patches frequently, especially after food. A mouth-wash, containing 15 grains of the acid in an ounce of water, is very useful in simple catarrhal stomatitis, but a glycerine paint (1 of acid in 4 or 5) is much better, and the addition of chlorate of potassium adds to the efficacy of the remedy. A gargle made from this glycerine combined with tannin or alum is very useful in relaxed sore throat. In severe cases of typhoid fever the mouth gets into a very foul state, the lips crack, the teeth become incrustated, and altogether the discomfort to the patient from these causes is hard to bear. To relieve this the following lotion is recommended to be applied to the teeth:—

Boric acid	..	..	..	..	30 grains
Chlorate of potassium	..	..	..	..	20 "
Lemon juice	..	..	..	..	5v.
Glycerine	..	..	..	..	3iij.
Mix.					

When the teeth are well rubbed with this, the sordes quickly and easily become detached; little harm will follow from the acid present. The boric acid attacks the masses of bacilli and bacteria; the chlorate of potassium cools and soothes the mucous membrane; the glycerine and lemon-juice moisten the parts and aid the salivary secretion.

AN ANTISEPTIC TOOTH-POWDER.

IN the same paper the position of the medical practitioner in relation to the care of the teeth is referred to, and the writer maintains that it is his duty to see that the mouth and teeth of the patient are kept in a clean and healthy condition. Referring to tooth-powders, he says:—"A tooth-powder should possess certain characteristics; it should be antiseptic, cooling, agreeable to taste and smell, and have no injurious action on the teeth. After use, it should leave the

teeth white, and a sensation of freshness and cleanliness in the mouth. As an antiseptic in this connection nothing can displace boric acid. For years I have used the following powder, and can reconmend it.

Boric acid (finely powdered)	..	..	..	40 grs.
Chlorate of potassium	..	..	..	5ss.
Powdered guaiacum	..	..	..	20 grs.
Prepared chalk	..	..	..	3j.
Powdered carbonate of magnesia, to	..	..	..	3j.
Oil of roses	..	..	..	½ drop

Mix.

The boric acid in solution gets between the teeth and the edges of the gums, and there it discharges its antiseptic functions; the chlorate and guaiacum contribute their quota to the benefit of the gums and mucous membrane generally; the chalk is the insoluble powder to detach the particles of tartar which may be present, and the magnesia the more soluble soft powder which cannot harm the softest enamel.

Legal Report.

GEOGRAPHICAL NAMES AS TRADE-MARKS.

IN the Chancery Division of the High Court of Justice, on July 9, Vice-Chancellor Bacon had to decide on an application made by Mr. Van Duzer, of Southampton Row, London, for application of the title "Melrose Favourite Hair Restorer," as a trade-mark.

Mr. Van Duzer, it was proved, had manufactured a preparation under the above title since 1880, and it was also proved that the article had acquired a considerable reputation both in this country and abroad. In 1881 the applicant registered, under the Trade Marks Registration Act, 1875, a label of which the above words formed part, the law then not admitting of the registration of a mere fancy name. On September 18, 1885, his agents, Messrs. Horn & Son, applied for registration under Section 64 of the Patents, Designs, and Trade Marks Act, 1883, of the words "Melrose Favourite Hair Restorer" alone as a trade-mark; but the Comptroller-General refused to proceed with the application on the ground that the word "Melrose" was a geographical word, and therefore not within the meaning of the section, which permits the registration of "a distinctive device, mark, brand, heading, label, ticket, or fancy word or words not in common use." The applicant now moved that the Comptroller-General might be directed to proceed with the application.

The evidence in support of the application showed that the word "Melrose" had never been used by anyone but the applicant in connection with preparations for the hair, and that the name had, in fact, become identified with the applicant's preparation. A recent decision of Mr. Justice Chitty in "Re Trade Mark Alpine" (29 Ch. Div., 877) was also relied on, but the Registrar of Trade-Marks had declined to recognise that authority, on the ground that the Comptroller had intended to appeal against the decision, though, owing to an oversight, notice of appeal had not been lodged in time. It also appeared that the Comptroller had already registered as new marks under the Act several geographical words, such as "Cypius," "Willesden," "Brunswick," and "Balmoral."

Mr. Aston, Q.C., and Mr. Sebastian, who appeared for the applicant, relied on "Re Trade Mark Alpine," above referred to, where Mr. Justice Chitty held that the word "Alpine" and words of that class were, if not "fancy words," at least fanciful words when applied to articles of trade, and were, therefore, within the section.

The Solicitor-General (Sir Horace Davey, Q.C.) and Mr. Ingle Joyce, for the Comptroller, contended that the word "Melrose" was merely descriptive, and therefore no more entitled to registration than, for instance, "Dublin" whisky: also that Mr. Justice Chitty's decision departed from the literal meaning of the section, and should, therefore, not be followed.

The Vice-Chancellor said that this was a case in which a public officer desired to have a judicial construction put upon this Act of Parliament, so that in the discharge of his duty he might be able to act consistently in the future. The

question was whether the applicant, a manufacturer who for many years had sold his commodity under the trade name which he now desired to have registered, was prevented by the Act from having it registered because one of the words he used as part of the name was said to be a fancy word in common use. There were innumerable instances in which a particular commodity was sold under a distinct appellation. In the perfumery trade most of the names adopted were purely fanciful. The argument here was that as "Melrose" was a well-known word and had a geographical signification, it ceased when applied to a pot of pomatum to be a fanciful expression. In his opinion it was a fanciful expression, and one "not in common use" in connection with the description of article to which it was applied. The 74th section authorised the registration of, in addition to any trade-mark, "any distinctive word or combination of words, though the same is common to the trade in the goods with respect to which the application is made." He could not hesitate to apply those words to the words of the 64th section, "fancy word or words not in common use," and to hold that these latter words had reference to common use in "the trade." No doubt the words used must bear their strict sense, but he was asked to say that in this title the word "Melrose" was descriptive of a place. To that he would answer it was not descriptive and was not meant to be so. If, then, it was not descriptive, what was it? Could it be anything but a fanciful word? What connection had the commodity with Melrose? Being a mere fancy word, the applicant put it upon his goods in order to show that he was the manufacturer and no one else. He had adopted the very thing which the Act said might be registered. It was, reading the 64th and 74th sections together, a "fancy word not in common use in the trade in the goods with respect to which the application was made." Cases had been cited more or less resembling that now under discussion, but the case before Mr. Justice Chitty was directly in point; he could see no difference between that case and the present, and he had no inclination to differ from that learned Judge in the slightest degree. Mr. Justice Chitty had, as he (the Vice-Chancellor) had, to construe the Act of Parliament, and he came to the conclusion, as he (the Vice-Chancellor) now did without hesitation, that such a word as "Melrose" as applied to goods was not a geographical description, but was a purely fanciful word as much fanciful as the words "Eureka" or "Opponax" when applied to a particular commodity. No one could say that anybody in the village of Melrose could be injured by the applicant adopting the name. An inhabitant might, for instance, make Melrose horse-shoes as much as he liked, but he could not use the trade name which had become the absolute property of the present applicant. It appeared from the evidence that the Comptroller had already in several instances registered the names of places. In his opinion the present applicant was perfectly entitled to register the words "Melrose Favourite Hair Restorer." They constituted a trade name or mark, indicating a particular description of hair-restorer and no more.

The Solicitor-General submitted that, according to the usual practice, the applicant should pay the costs of the present motion as being part of the application for registration.

The Vice-Chancellor: I shall not give the Comptroller any costs, as the case is covered by the previous decision of Mr. Justice Chitty.

BANKRUPTCY REPORT.

THE AFFAIRS OF MESSRS. HARRIS & GOODWIN.—A statement of affairs in the above failure has now been issued, accompanied by the observations of the Official Receiver. The liabilities are returned at 109,917, of which 34,294, will probably rank against the estate, with assets 23,862. The debtors commenced business in partnership at Birmingham in 1873, and some time afterwards opened an office in London. Branches were also established at Shanghai, Hongkong, Batavia (Java), Singapore, Brisbane, Melbourne, Sydney, and Christchurch, New Zealand. In 1880 they formed a separate firm at Batavia in partnership with Mr. J. C. Kraft, and traded there until the end of December, 1885, when the

latter retired from the firm, the business being taken over by the debtors, by whom it has since been continued. The debtors attribute their failure to losses in respect of the Java business, and at their other branches abroad through bad debts, irregularities, and failure of their agents at Sydney, depreciation of exchange, falling markets, and the Franco-Chinese war. The Official Receiver states that proper books of account have been kept.

EDWARD LAWRENCE CLEAVER, 41 Church Road, Richmond, analyst and manufacturing chemist.

THE receiving order in this case was made on the petition of Mr. T. D. Buckwell, of Burgess Hill, Sussex, and the accounts filed show gross liabilities of 4,207*l.* 17*s.* 5*d.* of which 3,315*l.* 17*s.* 5*d.* is expected to rank, the assets being returned as *nil*.

Before the Registrar Giffard, on Wednesday, the debtor attended for his public examination which lasted the whole of the day.

In reply to Mr. Roberts, he said his deficiency account started with an item of 78*l.* odd paid to Mr. Buckwell. The money was not, however, in Court, but it was the amount of an award against him made by the Court of Chancery. His partnership with Mr. Buckwell commenced in 1883, paid into the business 1,100*l.* in cash and 100*l.* to some one else. He (the debtor) denied that he had drawn large sums out of the partnership business. An arbitrator awarded Mr. Buckwell 730*l.* and he unsuccessfully tried to set the award aside. He had a partnership with Mr. Walker in reference to his appointment as analyst to the Kensington Vestry. That was in 1884, and he received 1,000*l.* from Mr. Walker, which he paid into his banking account at the Kensington branch of the Alliance Bank. He had not given up his pass book to the trustee because he had not been asked for it. To the best of his belief the trustee had never said anything to him about giving up all his books and papers. The arbitrator had the book relating to the business in which Buckwell was a partner. In August last year Walker instituted proceedings for a dissolution of the partnership to secure repayment of his 1,000*l.* Walker held two life policies as security for his debt, but he did not think they were of any value. Mr. Walker had a salary of 300*l.* a year. He (the debtor) went to India in June, 1885, and received 700*l.* from those who sent him, in addition to his travelling expenses. He went over on behalf of the quinine syndicate of Mincing Lane. He was not concerned in the formation of the Waste Metal Syndicate in 1884 (January). Previously to that he had taken out a patent for the utilisation of waste metal, and the syndicate purchased his right under the patent for three hundred shares of 20*l.* each. He acted as manager for the syndicate for nine months, receiving a salary of from 120*l.* to 150*l.* a year. He had the machinery of the syndicate in his possession, and sold it. No claim had been made against him in respect of it. He had had Stock Exchange dealings with Messrs. Cook & Lemon and with Messrs. Massey & Waightman. He never received money from either firm in respect of his speculations. He also had dealings with a Mr. Allanmore, a stock broker, to whom he owed over 100*l.* He was married in October, 1874, and the greater portion of the furniture in his house belonged to his wife, who paid for it out of her own money. Some of her property might be included in the bill of sale.

By Mr. F. C. Willis: In 1881 he was carrying on the business of a wholesale druggist, and Mr. Blundstone joined him in January of that year. He (the debtor) received 830*l.* from him, which he paid into his private account. He did not know whether Mr. Blundstone asked him to open a joint account, but many conversations took place relative to the banking account. Mr. Blundstone objected, because he had no power to draw cheques. He did not have an account in the firm's name because he was privately over-paying the firm's account. Hundreds of entries in the books were in Mr. Blundstone's writing. He could not say in what particulars he had over-paid on the firm's account. The partnership with Mr. Blundstone was dissolved in June, 1881. He could not say how much he received out of the business; he believed he had received nothing; on the contrary, he paid money in. At the time of the dissolution he agreed to repay Mr. Blundstone his 830*l.* by

yearly instalments. During the partnership he did not engage in Stock Exchange speculations, but in June, 1881, he might have been pressed by Stock Exchange creditors—Messrs. Massey & Waightman. Just after the dissolution he gave Blundstone a bill of sale, and might have told him the reason for giving it was that he might make better terms with his Stock Exchange creditors. He did not realise the furniture and stock and pay the creditors *pro rata*, because it was not usual to do so. In January, 1882, he wrote to Blundstone, asking him to release him from the bill of sale as it affected his credit very prejudicially. The dissolution with Blundstone was for the express purpose of taking Mr. Buckwell into partnership. Buckwell paid 1,100*l.* or 1,200*l.* on joining him. Buckwell knew of the fact that the bill of sale was given to Blundstone. The partnership only had reference to the wholesale druggist's business. As analyst to the Kensington Vestry he received a salary of 200*l.* a year, and as analyst for Freeth & Pocock he received 150*l.* When the first instalment due to Blundstone fell due he did not pay it. He was sued, and defended the action on the ground that he had a counter-claim. Mr. Blundstone also sued for the second instalment, and when examined before Master Johnstone as to his means, he (the debtor) did not remember swearing he had none. He would swear he had no more than 200*l.* He did not tell Master Johnstone he was the owner of a patent for dealing with tin scrap. Buckwell ceased to be his partner in 1883, and in a Chancery action obtained an award against him of 700*l.* Witness had not paid the money, and never intended to do so. When he took Walker into partnership in the analytical business he had given up the druggist's business. When he resigned his analytical appointment his private practice fell off, and he had none now. He had some quinine in his possession belonging to the syndicate before referred to, and he intended to send it back when he was told where to place it. He had not disposed of any property since his bankruptcy.

At this stage the Court made a special order that the debtor should file a cash and deficiency account for three years prior to the receiving order, amend his accounts as to book debts and creditors omitted, and to supply a list of the articles of furniture claimed by his wife and his father. Leave was also given to examine these two at a private sitting, at which creditors should be represented. The examination was then adjourned.



PARTNERSHIPS DISSOLVED.

CHARLES & FOX, Mincing Lane, City, chemical and commission agents, and drysaltery and general merchants, as far as regards J. T. Fox.

FAGGE & LACY, Sunninghill and Ascot, medical practitioners.

HAWORTH, H., and T. E. WEBLEY, Ecclestone, near Chorley, chemical manufacturers, under the style of the Grove Chemical Company.

HILTON, RIDER & CO., Great Suffolk Street and Collinson Street, Southwark, oil merchants and drysaltery.

INDER, G. J., & SON, Camberwell Road and Old Kent Road, surgical and mechanical dentists.

PACKARD, E., & CO., Ipswich and Bramford, Suffolk, and Fenchurch Street City, chemical manure manufacturers, as far as regards E. Packard.

RECEIVING ORDERS AND DATE OF PUBLIC EXAMINATION.

ANGUS, JOHN (trading as John Angus & Co.), Ingram House, Fenchurch Street, London, Nevern Square, South Kensington, and St. Bathams, Berwick, chemical broker. August 11. 34 Lincoln's Inn Fields.

HICKEY, ANDREW, Birkenhead, mineral water manufacturer. July 21. Birkenhead.

ORDER FOR ADMINISTRATION IN BANKRUPTCY OF ESTATE OF DECEASED DEBTOR.

TARLTON, JOHN HAIGH, Cheddar, Somersetshire, surgeon. Trustee. Official Receiver, Bristol.

ADJUDICATIONS.

BLEWITT, BYRON, Leadenhall Street, London, and Adelaide Road, Hampstead, surgeon.

BRIDGWATER, EDWARD L. W., West Bromwich, chemist and druggist.

NOTICE OF DIVIDEND.

SULTZBERGER, HARTMANN HENRY, Anerley Park, Peuge, formerly of Cannon Street, formerly merchant, now out of business. First and final dividend of 1*s.* 4*d.*, July 15. Official Receiver's Offices, 109 Victoria Street, Westminster.

ORDER ON APPLICATION TO APPROVE SCHEME.

CLEGHORN, RALPH NICHOLSON, Gateshead, chemist and druggist.

TARIFF CHANGES IN RUSSIA.

The *London Gazette* of July 9 contains notification of alterations in the Russian customs tariff, which will come into force on the 1st (13th) of this month. The following are the chemical products and the new rates of duty, given in English equivalents:—

	s.	d.
Alum, crystalline (all kinds)	2	5½ per cwt.
„ calcined or powdered, also sulphate of alumina ..	2	11½ „
Alkali: caustic soda and potash	5	11 „
„ carbonated soda (all kinds), potash and pearl ash ..	3	11½ „
Acid, sulphuric, and bisulphide of carbon	2	2 „
Fuming sulphuric acid	5	11 „
Sulphates of copper	9	10 „
„ Salzbürg vitriol (iron and copper double sulphate) ..	9	10 „
„ sulphate of zinc	9	10 „
Glue	11	10 „

EASTERN ROMELIA TRADE.

The Government of Eastern Roumelia have prohibited the importation of the following amongst other articles into that province from June 22:— Medical drugs and materials which may only be imported by apothecaries and others upon complying with the police sanitary regulations in force.

TRADE-MARKS APPLIED FOR.

THE *Trade Marks Journal* publishes the following notice:—“Any person who has good grounds of objection to the registration of any of the following marks may, within two months of the date of this journal, give notice in duplicate at the Patent Office, in the form ‘J,’ in the second schedule to the Trade Marks Rules, 1883, of opposition to such registration.” All communications relating to patents, designs, or trade-marks to be addressed to H. Reader Lack, Esq., Comptroller-General of Patents, Designs, and Trade-marks, Patent Office, 25 Southampton Buildings, Chancery Lane, London, W.C.

From the “*Trade Marks Journal*,” July 14, 1886.

AN EAGLE; for cocoa and chocolate. By C. J. Van Houten & Zoon Weesp, Holland. 44,995.

“TRUFFLE SAUCE,” other wording and royal arms on label; for sauce. By Batty & Co., Finsbury Pavement, E.C. 50,322.

“MITCHAM LAVENDER” and a bunch of lavender flowers; for smelling-salts and perfumery. By T. C. Lovewell, 8 St. Mary's Place, Brighton. 50,995.

“VIENNA” and figure of a griffin; for yeast. By H. C. Jansen, Schiedam, Holland. 51,243.

“LUCIGEN,” for oils. By Hannay's Patents Company (Limited), 67 Great Clyde Street, Glasgow. 51,901.

“PELAGINE,” against sea-sickness, and other wording on fancy label; for a patent medicine. By Eugene Fournier, 81 Rue de Cléry, Paris. 51,925.

“COCHRANE'S AMELIORATE BALSAM,” and other wording on label; for a hair balsam. By John Cochrane, 92 & 94 Glassford Street, Glasgow. 52,561.

“PERKINS' INFALLIBLE LIVER PILLS,” for a medicine. By John Perkins, Victoria Street, Wolverhampton. 52,595.

“THE CANADIAN BAKING POWDER,” other wording and backwood scene on a label; for baking powder. By Pearce, Duff & Co., 118 Weston Street, Bermondsey, S.E. 52,830.

A white and blue diagonally striped wrapper, bearing words RICKETT'S PINK BLUE, and other wording; for laundry blue. By Rickett & Sons (Limited), 150 Queen Victoria Street, London. 52,854.

“TOWER BLUE” and figure of a tower; for laundry blue. By Deschamps Frères, Vieux Jean d'heurs, Mense, France. 53,117.

A DOG'S HEAD WITHIN A HORSE-SHOE, and wording; for a meat powder for feeding poultry, game, dogs, and horses. By George Ringer (trading as Rackham & Co.), Upper Gate Lane, St. Giles's Street, Norwich. 52,948.



The following applications for Patents have been registered at the Patent Office.

- Aerated Waters Bottles.**—8629.—July 1, 1886.—W. H. Lloyd, the younger. A new or improved apparatus for opening bottles containing aerated liquid, &c.
- Alkaline Carbonates.**—8906.—July 8, 1886.—G. A. Jarvis. Improvements in the manufacture of carbonates of soda and potash.
- Ammonia Distilling Apparatus.**—8819.—July 6, 1886.—L. A. Chevalet. Improvements in apparatus for distilling and purifying ammoniacal liquids.
- Artificial Manures.**—8723.—July 3, 1886.—E. Solvay. A new or improved process for the simultaneous manufacture of assimilable phosphates and of sulphate of ammonia.
- Ammonium Bichromate.**—8602.—July 1, 1886.—J. Park. Improvements in the manufacture of bichromate of ammonia.
- Battery Solution.**—8832.—July 6, 1886.—A. Schanschieff. A saline preparation for use in galvanic batteries, and the process for the manufacture thereof.
- Bottle Taps.**—8666.—July 2, 1886.—N. S. Heeley and I. A. Allaway. Improvements in taps for champagne and aerated waters.
- Bottles.**—8633.—July 1, 1886.—J. Maconochie and A. W. Maconochie. Improvements in fastenings for securing corks and stoppers in bottles, &c.
- Bottles, &c.**—8526.—June 29, 1886.—J. R. Windmill. Improvements in and apparatus for the manufacture of glass bottles, &c.
- Bottles.**—8677.—July 2, 1886.—J. C. Arnall and H. M. Ashley. Improvements in the manufacture of.
- Carbonic-Acid Gas.**—8599.—July 1, 1886.—J. Mangnall and W. Bratby. Apparatus for generating carbonic-acid gas.
- Caustic Soda.**—8860.—July 7, 1886.—A. M. Clark. Improvements in the manufacture of caustic soda.
- Complexion Improver.**—8503.—June 29, 1886.—C. H. Ashdown. Complexion masque.
- Dentistry.**—8572.—June 30, 1886.—A. P. Patterson. Improvements in and relating to dentures.
- Dentistry.**—8621.—July 1, 1886.—J. Law. Cleaning pulp cavities of teeth—an instrument for use in operative dentistry, named a "Pulp cleaner."
- Detergents.**—8528.—June 29, 1886.—C. P. Andersen. Improvements in detergents and dyes.
- Disinfectants.**—8509.—June 29, 1886.—A. Boake and F. G. A. Roberts. Improvements in disinfectants.
- Double-Chlorides.**—8542.—June 29, 1886.—E. Fürst. A process and apparatus for electrolytic treatment of certain double-chlorides.
- Drying Apparatus.**—8679.—July 2, 1886.—W. A. F. Wieghorst. Improvements in.
- Honey Extractor.**—8813.—July 6, 1886.—W. P. Meadows. Improvements in honey extractors and the like.
- Linen Glaze.**—8496.—June 29, 1886.—J. Dawson. An improved composition for glossing linen.
- Lubricators.**—8777.—July 5, 1886.—F. Tricr. Improvements in. (*Max Schneider*, Germany.)
- Mixing Machine.**—8773.—July 5, 1886.—E. Quack. Improvements in apparatus for stirring, mixing, or kneading substances.
- Obstetric Binder.**—8785.—July 5, 1886.—M. Orchard. An improved obstetric binder.

- Oils.**—8494.—June 29, 1886.—R. Tervet. Improvements in apparatus for distilling or refining mineral oils.
- Oils.**—8636.—July 1, 1886.—P. J. Davies. Improvements in oil bleaching or refining apparatus.
- Paraffin Wax.**—8756.—July 5, 1886.—R. Tervet and F. Alison. Improvements in treating and purifying paraffin wax, and in apparatus therefor.
- Phosphates (Manurial).**—8938.—July 8, 1886.—P. de Wilde. Process for rendering mineral phosphates capable of being assimilated by plants.
- Preservative Paint.**—8747.—July 3, 1886.—J. Aniello, J. Kennedy, and J. P. Halket. An improved antifouling and preservative paint or varnish.
- Receptacle for Liquids.**—8658.—July 2, 1886.—W. Hallam and J. Scott. A new or improved receptacle for liquids.
- Soap.**—8717.—July 3, 1886.—A. Macqueen. Soap manufacture by the introduction of fuller's earth to make it the best quality for domestic, nursery, and toilet purposes.
- Stoppers.**—8648.—July 1, 1886.—J. J. Varley. Improvements in the manufacture of stoppers for bottles for aerated liquids.—8650.—July 1, 1886.—J. J. Varley. Improvements in or applicable to bottles and stoppers for aerated liquids.
- Stoppers.**—8508.—June 29, 1886.—R. E. Phillips. Stoppers for bottles containing aerated or other liquids.
- Stoppers.**—8891.—July 7, 1886.—R. W. Thomas and P. C. Smith. A stopper for bottles.
- Thermometers.**—8566.—June 30, 1886.—A. Haddow. Improvements in thermometers.

Pharmaceutical Society of Ireland.

THE monthly meeting of this Society was held on July 7 at the Society's rooms, 11 Harcourt Street, Dublin. Present: The President, Mr. J. E. Brunker, M.A., in the chair, Dr. Collins, Messrs. Doran and Allen, Dr. Montgomery and Messrs. Hayes, Beggs, and Simpson.

Donations were announced of Annalen No. 2 K. K. Naturhistorischen Hofmuseums, Vienna, and of the General Index of the Year-Books 1864 to 1885, from the British Pharmaceutical Conference. The thanks of the Society were voted for the donations.

A report from the Law and Certificates Committee was discussed and adopted.

An application was read from a licentiate whose certificate had been injured by fire, asking to have a new certificate issued. The Registrar was directed to give the applicant a letter stating that he had passed the final examination, and was a duly registered pharmaceutical chemist.

The President mentioned that at the Preliminary examination held on Monday, July 5, twenty candidates presented themselves, of whom twelve passed. The report of the examiner showed an improvement in dictation.

The Council then adjourned.

Personalities.

MR. ADAM YOUNG has resigned his appointment as deputy-chairman of the Board of Inland Revenue, and Lord St. Cyres has been appointed to succeed him.

MR. SHEPPERSON, representing Messrs. Burroughs, Wellcome & Co., has just left England for another extended tour through the South African colonies, India, China, Japan, the Philippine Islands, and Australasia, in the interests of the firm.

DISINFECTANTS.

(RECOMMENDED BY THE COMMITTEE OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.)

For Excreta.

(a) In the sick-room:

For spore-containing material:

1. Chlorinated lime in solution, 4 per cent.

2. Mercuric chloride in solution, 1 : 500.†

In the absence of spores:

3. Carbolic acid in solution, 5 per cent.

4. Sulphate of copper in solution, 5 per cent.

5. Chloride of zinc in solution, 10 per cent.

(b) In privy vaults:

Mercuric chloride in solution, 1 : 500.*

(c) For the disinfection and deodorisation of the surface of masses of organic material in privy vaults, &c.:

Chlorinated lime in powder.‡

For Clothing, Bedding, &c.

(a) Soiled underclothing, bed-linen, &c.:

1. Destruction by fire, if of little value.

2. Boiling for at least half an hour.

3. Immersion in a 2-per-cent. solution of mercuric chloride of the strength of 1 : 2,000 for four hours.*

4. Immersion in a 2-per-cent. solution of carbolic acid for four hours.

(b) Outer garments of wool or silk, and similar articles, which would be injured by immersion in boiling water or in a disinfecting solution:

1. Exposure to dry heat at a temperature of 110° C. (230° Fahr.) for two hours.

2. Fumigation with sulphurous acid gas for at least twelve hours, the clothing being freely exposed, and the gas present in the disinfection chamber in the proportion of 4 volumes per cent.

(c) Mattresses and blankets soiled by the discharges of the sick:

1. Destruction by fire.

2. Exposure to super-heated steam—25 pounds pressure—for one hour. (Mattresses to have the cover removed or freely opened.)

3. Immersion in boiling water for one hour.

4. Immersion in the blue solution (mercuric chloride and sulphate of copper), 2 fluid oz. to the gallon of water.

Furniture and Articles of Wood, Leather, and Porcelain.

Washing, several times repeated, with:

1. Solution of mercuric chloride, 1 : 1,000. (The blue solution, 4 oz. to the gallon of water, may be used.)

2. Solution of chlorinated lime, 1 per cent.

3. Solution of carbolic acid, 2 per cent., for metal articles.

For the Person.

The hands and general surface of the body of attendants of the sick, and of convalescents at the time of their discharge:

1. Solution of chlorinated soda diluted with 9 parts of water (1 : 10).

2. Carbolic acid, 2-per-cent. solution.

3. Mercuric chloride, 1 : 1,000; recommended only for hands, or for washing away infectious material from a limited area, not as a bath for the entire surface of the body.

For the Dead.

Envelope the body in a sheet thoroughly saturated with:

1. Chlorinated lime in solution, 4 per cent.

2. Mercuric chloride in solution, 1 : 500.

3. Carbolic acid in solution, 5 per cent.

* The addition of an equal quantity of potassium permanganate as a deodorant, and to give colour to the solution, is to be recommended.

† A concentrated solution containing 4 oz. of mercuric chloride and 1 lb. of cupric sulphate to the gallon of water is recommended as a standard solution. Eight ounces of this solution to the gallon of water will give a dilute solution for the disinfection of excreta, containing about 1 : 500 of mercuric chloride and 1 : 125 of cupric sulphate.

‡ For this purpose the chlorinated lime may be diluted with plaster of Paris, or with clean, well-dried sand, in the proportion of one part to nine.

§ The blue solution containing sulphate of copper, made by mixing 2 oz. of the concentrated solution with a gallon of water, may be used for this purpose.

Trade Report.

It should always be remembered that prices quoted in this section are as nearly as can be ascertained the lowest that are actually paid for bulk quantities. Considerable allowances have to be added in many cases before ordinary prices can be ascertained, and for many drugs it must be recollected the range of quality is very wide.

MINCING LANE, July 16.

ACIDS.—*Carbolic* is in active inquiry, and it is stated that the next three months' produce in this country has been taken up, chiefly by Continental buyers. Prices are therefore firm, and with a continuance of warm weather may be expected to rise slightly. *Citric* is quieter, but no change has occurred since our last report. *Oxalic* can now be bought at 3½d. and 4d., with the usual discount. *Tartaric* prices are unchanged, and business is still in a languid condition.

AMMONIUM SULPHATE is firmer. The price in London is 11½s. for grey 24 per cent., or 11½s. 9d. on spot at Hull. *Chloride* (white) may be bought for 28½. per ton, and the *carbonate* at 5d. per lb., less 15 per cent., is dull of sale. *Sal Ammoniac* is in good demand, at 36½. per ton for the best quality.

ALUM.—Business is not so brisk. The price for lump remains at 5½. 10s. per ton, and for ground 6½. 2s. 6d.

ARSENIC.—Powdered white may be purchased for 9s. 3d. per cwt.

BLEACHING POWDER.—There is nothing new to state since our last report. The market is very inactive at 7½. per ton ex warehouse.

BORAX.—The demand is limited, at 27½. for foreign and 28½. 10s. to 29½. for English.

CREAM OF TARTAR.—The price continues at 124s. ex warehouse, but 124s. 6d. has been asked, and it is anticipated that that or a higher figure will shortly be reached.

POTASH SALTS.—*Bichromate* is without improvement, at 3½d. *Chlorate* remains at 6½d., but with few sales. *Ferrocyanoide*, 7½d.

QUICKSILVER.—Following the advance in importation price, the makers of mercurials have notified advances, and the following are the prices per lb. now quoted by Howards & Sons and May & Baker: Calomel, 2s. 9d.; corrosive sublimate, 2s. 2d.; red precipitate, 3s. 2d.; white precipitate, 2s. 11d.; mercury with chalk, 1s.; mercurial ointment, B. P., 1s. 9d. The importer's price of quicksilver is still 7½., but it may be bought from second-hand holders at 6½. 15s.

SAL ACETOS at 6½d. is in small demand.

SODA SALTS.—Prices are unaltered.

VARIOUS CHEMICALS.—*Sugar of Lead.* Rather quieter, sales taking place at 22s. 6d. per cwt. A small trade is being done in *saltpetre* (English) at 21s. 3d. *Flowers of sulphur* remain at 9s. 6d. per cwt., and *roll sulphur* is quiet, at 8s. to 9s.

CHRYSAROBIN.—Owing to the scarcity of araroba, this article is expected to go higher. The price to wholesale buyers is, this week, 11s. per lb.

COCOA BUTTER.—We are advised that manufacturers in Holland have considerably increased their prices for refined cocoa butter, and now ask 220 to 230 marks for 100 kilos. (from 1s. to 1s. 1d. per lb.). It is procurable from second-hand holders at rates about 20 marks lower.

OPIMUM.—More business done, and for some descriptions the market is rather firmer, partly due to report that the finer qualities of new crop are rain damaged. Shipments of new crop expected to arrive about end of present month. The present market prices for druggists' kinds rule from 8s. 6d. to 10s. per lb.

QUININE (SULPHATE).—On Wednesday Messrs. Howards

& Son reduced their prices to 2s. 8d. for bulk or 4-oz. bottles, and 2s. 10d. for 1-ounce phials. Continental makes remain at last week's prices. *Citrate of Iron and Quinine* shows a corresponding reduction, the price now standing at 9½d. per oz. in bulk, and 10½d. in phials.

CINCHONA BARK.—The arrivals of Ceylon bark continue to increase, and there appears to be no sign of diminution. For the eight months preceding June no less than 10,923,013 lbs. of bark were shipped from Colombo and Galle, and since then nearly 700,000 lbs. have been shipped up to the middle of June. Of this about 228,000 lbs. have been shipped to New York and Rotterdam. The following is a statement of the stock in London on July 1:—

	1883	1835
Packages	65,619	76,190
Imported in six months—		
Packages	35,500	26,550
Delivered in the same period—		
Packages	31,530	30,830

The Board of Trade returns show a large increase in the exports over any previous year, and the general statistical position is not unsatisfactory. The following are the details as compared with last year:—

Returns for six months—	1836	1835
Imported in six months ..	74,972 cwt.	56,476 cwt.
Exported " " ..	56,123 "	49,835 "

There was little animation at the sales on Tuesday, and the bark which was brought to auction was of comparatively poor quality. Prices so far remain unchanged. Of *Ceylon* bark nearly 2,400 packages were offered, and close upon 2,000 were sold. *Calisaya* and *Ledgeriana* chips, considerably mixed with dirty matter, brought from 3d. to 5½d.; and bolder and finer lots of good quality sold at from 7d. to 1s. 1d. Renewed *Calisaya* sold at prices varying from 3d. to 1s., and root bark fetched 9d. *Officinalis*, branch bark in chips, with fair proportion of small, sold at from 4d. to 6½d.; better lots fetched as much as 8d. and 10d.; bold, branch quills at 5½d. and 6d.; and spoke shavings of ordinary quality sold at 6d. to 8½d.; while for firm, bright bark in shavings, 9d. to 1s. was secured. Of renewed stem and branch bark there were some parcels very choice, which brought 1s. 7d. to 1s. 8d., and some almost as good, most of which was in shavings, but an excellent workable bark, was sold at 1s. 4d. and 1s. 6d.; ordinary lots were 9d. to 11½d., and better quality from 1s. to 1s. 3d. The *succirubra* which was offered showed no special features. Branch bark, small, 1d. to 2½d.; bolder and older bark, 4d. to 5d.; and some, mostly chips, 2½d. to 6d. Dull root bark sold at 3d. to 4d.; brighter lots from 4½d. to 5½d.; and rich, 6d. to 6½d. Spoke shavings, dull to very good bright, 3½d. to 9d. Shavings of renewed bark, excellent quality, 1s. 2d. to 1s. 3d. Of other lots of renewed, the prices obtained were from 3½d. for low woody, to 1s. 1d. for fine clear bark. There were several bales of crushed quills, which sold at 7d. and 8d. Of other East Indian barks, 28 packages of the 45 offered were sold, and brought former prices. There was a small supply, consisting of six cases of branch and quill bark from the West Coast of Africa, which brought 3d. to 6d. South American bark, about 800 packages were offered. This consisted chiefly of *calisaya* and *Carthagena* quill, and about 250 of *cuprea* bark. Only 140 bales were sold, and that with difficulty, at the following rates: Bolivian *calisaya*, fine quill at 1s. 3d. to 1s. 5d.; columbian, somewhat stringy, soft, and partly sea-damaged, 2d. to 2½d.; *cuprea* fetched 6½d. The market closes with somewhat easier rates, and the unit is unchanged. A bright-looking lot of 155 bales of Java bark, mostly from Quetta, and consisting of *Ledgeriana* and hybrid, attracted some attention. It was of excellent quality, and stated to be very rich in alkaloid. The prices of this ranged from 3½d. to 10d. for bold branch and quilly chips of the hybrid, and 1s. 1d. for root of the same. *Ledgeriana* branch and chips, 5d. to 1s. 5d.; renewed, 1s. 2d., and root bark, 1s. 1d. to 1s. 6d. Following the extensive uprooting of cinchona trees which we recently reported, large supplies of root bark are now being offered in our markets. This bark, as a rule, is much richer in alkaloid than branch and stem bark, but, naturally, the supply of it is determined by the existence of the trees. Planters, however, are now more inclined to

uproot the trees at the end of half a dozen years, and we may expect fairly regular supplies for some time to come.

SPICE SALES.—*Caraway Seed*.—A parcel of 270 bags, *Dutch*, sold at 26s. to 30s. 6d. without reserve.

CASSIA LIGNEA is in little request, and prices are almost nominal; 40 boxes out of a lot of 200 sold at 24s. 6d.

CLOVES were in little request, and 243 bales of *Zanzibar* were bought in at 9½d., and 4 sold at 9½d.; good *Penang*, 1s.: *Amboyna*, 9½d., without reserve, and *Granada*, 9d. The amount of business done was trifling.

GINGER.—The market is still flat. Ninety packages (various) of *Cochin* were disposed of at 55s. to 56s. for medium and small bright cut; medium to bold, partly cut, 48s. to 55s.; fair rough to ordinary small washed, 29s. to 30s. *Jamaica*, common qualities, 37s. to 40s.; low and washed middling, 43s. to 48s. 6d.; good medium to good sold at from 52s. to 60s., although 70s. was obtained for a lot of bold root. *Sound African* brought 20s.

MAIZE.—Business doing is almost nil, owing to small stocks, and prices are somewhat firmer.

NUTMEGS.—The dearer prices are maintained and further rises have been experienced. *Bombay*, 170's 9d.: broken 6½d. *West India*, slightly wormy, 76's 2s. 1d.; 116's 1s. 6d.

PEPPER.—Of *Acheen* 700 bags sold at 6½d. *Singapore*, grey, 7½d.; fair, 7½d. *White*.—In auction 267 bags *Singapore* were bought in at 1s. 1d. A large supply, amounting to nearly 1,300, was brought into a quiet market, and prices declined somewhat.

CUTCH.—Unchanged; 250 cases of MM slabs, and 500 of RS slabs offered were withdrawn.

GALLS.—Ninety-two cases of China galls, sea-damaged, sold without reserve at 50s. 6d. to 54s.

GAMBIER.—Prices at present are 21s. 9d. to 22s. 3d. for block, and 26s. to 28s. 9d. for pressed and free cubes. The stocks held amount to 1,758 tons, as compared with 2,036 tons last year at this time. A downward tendency in gambier has been experienced in the States, and on this the *Oil, Paint, and Drug Reporter* remarks:—"Some buyers have faith to believe that there are better times in store. The fact that all the other markets are higher than this, and maintain a strong front while the tendency here is weak, lends some strength to the belief thus expressed, and it is probable that there will be a recovery from the present low prices sooner or later. At present the cost of gambier in Singapore is equivalent to 4½c. laid down here, while the London quotation last cabled was 21s. 6d., equal to 5½c. here. Both of these quotations are above present spot market prices."

INDIGO.—The sales commenced on Monday with a declared quantity amounting to 7,530 chests. In the course of the auction, and before, many of these were withdrawn. There was an absence of demand for the better qualities of *Bombay* and *Tirhoot*, and prices declined from 4d. to 6d. on previous rates (4s. 10d. to 6s.). For lower qualities the competition was brisk, and firmer prices were maintained. A few lots of *Bengal* dribbled off at a decline of from 4d. to 5d. on previous rates for good qualities, the prices now being 2s. to 2s. 7d. for *Hoodie*, and 8d. to 1s. 4d. for *Button* sorts. *Kurpahs* were in brisk demand, the better kinds bringing slightly advanced prices, but ordinary and inferior lots had a struggle to hold their own, and occasionally declined slightly. The prices at par are 4s. to 5s. 3d. for the better, and 1s. 6d. to 4s. for inferior varieties. *Oudhs*, of which there was a small supply, brought former valuations, which are 3s. 4d. to 4s. 7d. for *Plant*, and 2s. to 3s. 6d. for *Native*.

Monday's sales, 866 chests; Tuesday's, 769 chests.

SHELLAC.—107 chests sold on Tuesday, and slightly improved rates for *button*, and the market closed with better and firmer tone. Good second orange, TN diamond, brought 50s. to 51s., and GH diamond, of livery character, at 43s. *Button lac* sold for 43s. for black, to 50s. for fine second in diamond BL.

SEEDLAC AND STICKLAC.—In these no business was done all that were offered having been bought in. The value of

the former is from 32s. to 39s. The latter ranges from 30s. to 32s. per cwt., and is in very poor demand, 2 cases only of the last lot (158 packages) having been sold.

TURMERIC is in limited demand at lower rates, the supply being large. Seventy bags of bold and whole Madras bulbs fetched 11s. 6d. to 11s. 9d.; dust and end pieces, 5s. to 10s. A parcel of split Cochin bulbs, just arrived, and amounting to 318 bags, 7s. to 7s. 9d.

COCOANUT OIL shows no change, and the market is quiet. Ceylon 26l. 5s. in pipes, and 26l. 10s. and 26l. 15s. hogsheds. Cochin rules at 32l. 10s., and 33l. on the spot. Mauritius slow at 26l.

COTTONSEED OIL.—*Crude* is still held at 16l. in London, and in Hull at a slight advance on previous rates. *Refined* according to quality and package, 18l. to 18l. 10s. on the spot. 18l. 10s. for July–August. In Hull the price is 17l. 7s. 6d. on spot, to 17l. 10s., and 17l. 10s. to 17l. 15s. for forward delivery.

LINSEED OIL.—The slight advances which were recorded in our last report have not altogether been maintained, and in a quiet but steady market the following figures now rule:—Pipes on the spot in London, at waterside or landed, 21l.; barrels, 21l. 5s.; July–August, 21l. 2s. 6d.; September–December, 20l. 5s., buyers offering 20l. Hull, spot, 21l. 5s. to 21l. 12s. 6d.; July–August, 21l.; and September–December, 19l. 10s.

OLIVE OIL.—*Mogadore* is the only kind for which there is any demand, and that of a very limited nature, at 32l. 10s. The Liverpool market shows the same tone, and small transactions.

PALM OIL.—The market has been quiet, and business is chiefly confined to *Lagos*, firm quality of which is held at 24l., but quite nominal.

PETROLEUM OIL.—The deliveries since January 1 have been 302,787 barrels, against 285,240 barrels same time last year. The market is quiet. Prices this day are for *American* on the spot, 5³/₁₆d. to 5¹¹/₁₆d., September–December 5¹³/₁₆d. to 5⁵/₁₆d., January–March 6⁵/₁₆d. *Russian P.W.*, spot 4³/₁₆d. to 6d., as to quality, November–December 5³/₁₆d., January–March 5²/₁₆d. to 6d.

RAPE OIL continues dull, and with few sales. Prices have fallen slightly. *English brown* on the spot, and for July–August, 21l.; September–December, 21l. 5s.; January–April, 21l. 10s. *English refined*, 22l. 5s. to 22l. 10s.

TURPENTINE.—Prices have improved. In Liverpool, 27s. 6d. on the spot, an advance of 1s.; and in London, 25s. 4¹/₂d. to 25s. 6d. on the spot, and for September–December 24s. 9d. to 25s.

THE AMERICAN MARKETS.

NEW YORK, July 2.

THE current week has shown a continuance of the active demand lately prevailing in the drug market. The values of staple articles have not greatly altered, but with the expectation of still greater activity in the near future a very firm tone prevails. The export demand has been fairly brisk and fully up to the average at this season.

The prices sterling (in parentheses) are what the different articles would cost delivered in London, all market allowances, discounts, &c., being taken into account. Importers can, therefore, see at a glance the course of this market compared with their own.

ALOES CURACAO.—No further arrivals have taken place, and no transactions are reported. There is to be a considerable quantity offered next week by auction.

BALSAMS.—The market for *Copaiba* has declined to a very low point, viz., 26c. (1s. 2d.) for Angostura, and 30c. (1s. 4d.) for pure muddy Maranh. The original import of Para mentioned in previous reports is still unsold; 27c. (1s. 2¹/₂d.)

would probably buy it. A recent direct import of *Tolu* was quitted to-day at 25c. (1s. 1¹/₂d.) for 20 lb. tins. *Peru.*—The market has been demoralised by the low price (3s. 11d.) brought by the lot, sold by auction, last week. *Canada* is neglected, and is tending towards much lower rates.

CANELLA ALB.—The small stock is now in the hands of one firm holder; as no supplies are expected from the Bahamas higher rates are looked for. Last sale 8c. (4¹/₂d.).

TONCA BEANS.—No interest is taken in Paras, while Angostura are arriving in large quantities, and lower rates expected before long.

GUARANA.—The position is unaltered, holders are firm at \$1.10 (4s. 11d.), while buyers will not give more than \$1 (4s. 6d.); stock 30 cases.

ESSENTIAL OILS.—The falling off in demand for *Sassafras*, which is still offering at 38c. (1s. 8¹/₂d.), has been a matter of surprise to holders. For a considerable time the distillers have ceased operations, as present rates do not remunerate them, and everybody looked for a speedy rise in value; stocks here are getting reduced, and one of these days will be concentrated in a few hands; then the rise will come, and a big one, for this oil could easily bear being 2s. 6d. per lb. again. *Wintergreen* is also very cheap now; consumers need not be afraid to stock up at present rates, \$1.75 (7s. 6d.). *Spearmint* is very scarce indeed.

POTASSIUM BROMIDE.—There is no inquiry for export. Manufacturers quote 34c. (1s. 5³/₁₆d., 5 per cent.), but this would be shaded by second-hand holders.

ROOTS.—*Golden Seal* rules cheap at 13c. (7¹/₂d.). *Jalap*, all the outside parcels have been bought up, and it is doubtful if any prime heavy root could now be had under 12c. (6³/₄d.); this movement is based on the absence of arrivals, and Mexican reports stating that no more will be sent forward till the markets improve. Purchases are being made in Hamburg for American account. *Serpentaria.*—None arrives from the south, the market is bare of supplies, and it is now conceded that high rates will prevail. *Senega.*—The reports from the West agree that the new crop is coming in slowly, and not in the same quantity as in former years. Owing to competition the price rules low, prime bright western being quoted 46c. (2s. 2d.), while ordinary is 43c. (2s. 0¹/₂d.), and common chumpy kind 41c. (1s. 11¹/₂d.). St. Paul is still the head-quarters for the trade in collecting this root, but it is worthy of note that, as the settlement of the country proceeds, it has to be sought for at yearly increasing distances, and now no inconsiderable supplies are drawn from the great north-western province of Manitoba, the quality of which, although bright in colour and strong root, is very chumpy.

SPERMACETI.—The demand has been very large from all quarters, and, as fully two-thirds of the orders received were not accepted, on account of the advance and scarcity, no decline in price can now be expected before next winter.

QUININE.—Without any change in the position the market drags along without life and animation. The consumptive demand, although fairly good, is disappointing to those who expected the advent of 50c. quinine would bring all the druggists into the market and that quite a lively time would result. Buyers have been so frequently bitten by this article that they will now simply take what they require for a month or two and risk it advancing. As things have been going this is a safe policy to pursue, and nothing appears in the future to warrant any alteration in their methods. American in oz. is quoted 67c. (2s. 10¹/₂d.) officially. German, in bulk, 55c. (2s. 4d.); but small quantities can be had at 52c. (2s. 2¹/₂d.), and round lots at 50c. (2s. 1¹/₂d.).

OIL PEPPERMINT.—With the exception of a demand springing up from Germany there is no remark to be made this week.

MEXICAN SARSAPARILLA.—A speculator has taken all the stock here (about 500 bales) and bought 600 bales in Hamburg with the intention of putting up the price to 12c. (6³/₄d.). It appears strange if total arrivals from Mexico will cease all at once, especially when on an average nearly 300 bales a week arrived here during April and May. Consumers cannot be badly in want, having bought freely at the low prices of last month, and would do well to hold off buying as long as they can.

LAST MONTH'S TRADE STATISTICS.

THE Board of Trade Returns for June show a slight decrease in imports and an increase of nearly 900,000*l.* on exports. The following are the figures:—

Imports.

	June, 1885	June, 1886
Total value	£29,236,984	£29,101,941

Exports.

	June, 1885	June, 1886
Total value	£17,717,289	£18,536,076
Foreign and colonial produce (partly estimated) ..	4,810,543	4,246,593

Below are the details affecting drugs and chemicals:—

Imports.

	June, 1884	June, 1885	June, 1886
Chemical manufactures and products (unenumerated) .. value £	124,586	108,775	114,696
Alkali cwt.	6,816	8,116	8,241
.. .. value £	8,046	6,570	6,342
Brimstone cwt.	63,665	78,275	68,292
.. .. value £	16,774	20,519	16,234
Nitre (nitrate of soda) .. cwt.	212,667	181,965	145,891
.. .. value £	97,194	90,607	67,287
.. (nitrate of potash) .. cwt.	27,509	21,695	24,742
.. .. value £	24,735	18,074	21,674
Quicksilver lbs.	347,100	1,599,600	684,741
.. .. value £	25,352	117,569	62,160
Drugs, unenumerated	71,639	57,397	61,965
Bark, Cinchona cwt.	6,536	8,481	15,281
.. .. value £	57,930	52,967	91,590
Gum Arabic cwt.	1,778	6,058	2,743
.. .. value £	5,237	19,795	9,796
Lac, seed, shell, stick, and dye .. cwt.	6,814	7,401	8,153
.. .. value £	24,937	23,778	22,871
Spices—			
Cinnamon lbs.	9,128	63,782	8,490
.. .. value £	424	1,340	129
.. .. cwt.	11,575	16,379	18,237
.. .. value £	22,885	32,222	36,762
.. .. lbs.	2,652,724	1,385,803	961,131
.. .. value £	60,609	38,863	25,681
Dyes and tanning materials—			
Bark (for tanners' or dyers' use) .. cwt.	44,052	30,387	72,037
.. .. value £	19,024	12,989	44,130
Aniline dyes	19,585	18,340	15,393
Alizarine	19,410	15,692	19,557
Other coal-tar dyes	378	366	—
Cochineal cwt.	840	762	989
.. .. value £	4,877	4,488	6,395
Cutch and gambier tons	2,638	1,464	1,273
.. .. value £	70,199	39,065	28,151
Indigo cwt.	3,570	1,352	2,270
.. .. value £	67,364	23,276	37,025
Madder, madder root, garancine, and murex cwt.	1,441	2,024	1,557
.. .. value £	1,946	3,012	1,898
.. .. tons	2,806	2,109	3,878
.. .. value £	42,845	31,295	52,410
Oils—			
Cocoanut cwt.	5,414	21,785	4,042
.. .. value £	8,881	33,548	5,736
.. .. tons	1,632	1,788	1,867
.. .. value £	64,185	69,688	70,211
Palm cwt.	86,554	72,372	70,048
.. .. value £	135,449	100,861	70,078
Petroleum gals.	1,425,085	5,637,387	5,398,918
.. .. value £	54,065	193,287	148,717
Seed, of all kinds tons	165	602	949
.. .. value £	15,083	17,861	24,420
Train, blubber, and sperm tons	1,558	1,202	1,506
.. .. value £	48,037	34,009	40,152
Turpentine cwt.	17,753	14,944	866
.. .. value £	21,049	18,438	1,055

Exports.

	June, 1884	June, 1885	June, 1886
British and Irish produce—			
Alkali cwt.	466,687	514,377	494,355
.. .. value £	144,377	160,185	142,607
Bleaching materials cwt.	93,412	125,002	130,443
.. .. value £	37,056	43,174	40,273
Drugs and medicinal preparations	72,676	65,726	75,571
Oil (seed) gals.	1,312,200	1,440,860	1,623,500
.. .. value £	113,606	132,084	138,931
Soap cwt.	46,583	40,425	31,238
.. .. value £	52,532	46,769	32,030

Exports—continued.

	June, 1884	June, 1885	June, 1886
Foreign and Colonial merchandise—			
Bark, Cinchona cwt.	11,183	12,889	23,376
.. .. value £	81,429	50,194	42,123
Chemicals (unenumerated)	27,646	22,637	13,763
Cochineal cwt.	1,008	1,344	991
.. .. value £	5,381	9,248	6,527
Cutch and gambier tons	736	557	767
.. .. value £	20,377	12,697	19,714
Gum, Arabic cwt.	2,157	2,796	3,578
.. .. value £	6,351	9,246	15,172
Indigo cwt.	2,914	3,310	1,982
.. .. value £	63,052	62,457	44,518
Lac, various kinds cwt.	5,365	9,539	6,213
.. .. value £	20,702	32,251	18,205
Oils, cocoanut cwt.	10,436	11,225	14,182
.. .. value £	17,609	17,410	19,096
.. olive tons	152	230	147
.. .. value £	7,456	11,273	7,064
.. palm cwt.	39,574	33,317	11,548
.. .. value £	63,969	52,860	10,809
.. petroleum gals.	21,497	40,922	73,938
.. .. value £	942	1,767	3,591
Quicksilver lbs.	444,475	363,590	499,250
.. .. value £	32,371	27,848	42,474
Salt-petre cwt.	4,114	491	7,671
.. .. value £	3,653	423	6,287
Spices, cinnamon lbs.	131,971	70,092	132,951
.. .. value £	4,551	2,984	4,671
.. pepper lbs.	1,200,375	1,871,133	1,499,685
.. .. value £	36,893	60,234	43,257

The following were the Stocks in the Port of London on June 30, with those for the corresponding date of the previous year:—

	1886	1885		1886	1885
Aloes cwt.	3,733	3,291	Gum (cont.)—		
.. .. kegs	12	31	Guaiaecum .. pkgs	20	75
.. .. gourds	262	278	Kino	143	160
Aniseed, Star .. cwt.	317	207	Kovrie tons	1,451	1,323
Arrowroot cwt.	15,054	13,666	Mastic pkgs	134	182
.. .. bxs & tins	2,562	4,460	Myrrh, E.I. ..	283	157
Balsam cwt.	380	455	Olibanum	5,668	7,009
Barks, Medicinal	7,155	3,075	Sandarac	1,530	1,567
.. .. cwt.	58,484	73,113	Tragacanth ..	1,433	1,817
.. .. Tanners' tins	1,143	861	Indigo, E.I. .. cwt.	18,978	15,752
Borax pkgs	792	525	Spanish bxs	3,173	2,715
Bees' wax lbs & cwt.	1,428	935	Ipocac cwt & bxs	153	120
.. .. cwt.	1,349	583	Jalap lbs	214	194
.. .. cakes	105	3	Lac Dye cwt.	8,069	9,160
Wax, Jap. vgtbl. pk	1,715	797	Myrratan tons	8,241	4,201
Calumba root .. pkgs	1,889	1,270	Nux Vomica .. pkgs	873	726
Camphor pkgs	6,281	7,742	Oil—		
Cardamoms cwt.	857	833	Castor cwt.	517	481
Cochineal, srns, &c.	7,939	9,091	.. .. cwt.	6,569	3,700
Coccol. Ind. bgs, &c.	594	513	Palm tons	116	282
Cream of tartar .. cwt.	42	58	Cocoanut	1,684	2,728
Cutebs bgs	104	81	.. .. cwt.	2,267	1,910
Dragon's blood .. cwt.	133	129	.. .. cwt.	305	321
Galls, China & Jap. ..	4,949	3,463	.. .. cwt.	159	93
.. .. cwt.	6,400	4,888	Opium cwt.	1,810	2,093
Trky & Prsn			Plumbago tons	3,555	2,212
Ammoniac pkgs	301	206	Rhubarb cwt.	1,645	1,060
Animi & Copal			Saltpetre, Nit. Pot.		
.. .. pkgs	7,231	8,673	.. .. tons	1,510	2,692
Arabic, all descriptions .. pkgs	19,366	10,225	Nitrate Soda ..	5,763	3,003
Asafoetida	1,200	1,245	Sarsaparilla lbs	542	324
Benjamin	2,193	1,592	Senna bxs, &c.	444	1,520
Dammar	6,203	3,790	Shellac cwt.	65,080	51,661
Galbanum	10	18	Sticklac cwt.	4,987	3,703
Gamboge	182	159	Terra Japonica—		
			Gambier tons	1,758	2,036
			Cutch	2,493	2,085
			Turmeric tons	1,625	936
			Vermilion, cwt., &c.	28	—

GUM ANIMI, or LOCUST GUM, is so called because it is the gum of a tree commonly called the "locust tree."

GALVANIC FLANNEL.—A novel method of applying an electric current to the body forms the subject of a patent granted to the agent of Senor Pumariega, of Avile, Spain (2,322, 1886). The inventor steeps flannel in a bath composed of equal parts of oxide of iron, copper, zinc, and tin mixed in fine powder in weak gum-water. The flannel thus takes up a quantity of the metallic oxides which are excited by the perspiration of the body, which is then subjected to a weak but constant electric current.

		July 2				July 16						July 2				July 16			
		£	s.	d.		£	s.	d.				£	s.	d.		£	s.	d.	
Oils:—(cont.)																			
Castor, 1st pale.....	per lb.	0	3½	0	4½	0	3½	0	4½	SEAL, yellow to tinged..	per tun	19	0	27	0	19	0	20	0
Castor, second	"	0	3	0	0	0	3	0	0	" brown	"	16	0	18	0	15	0	18	0
Cod-liver	per gall.	2	10	4	0	2	10	4	0	SPERM	"	52	0	53	0	51	0	52	0
Essential Oils:																			
Almond	per lb.	13	0	27	0	13	0	27	0	COD	"	25	0	0	0	25	0	0	0
Anise-seed, star	"	6	3	0	0	6	3	0	0	WHALE, South Sea, pale	"	20	0	0	0	17	0	20	0
" German, &c.	"	10	0	11	6	11	0	11	6	" yellow	"	16	0	17	0	16	0	17	0
Bergamot	"	9	6	11	0	9	6	11	0	" brown	"	14	0	16	0	14	0	16	0
Cajepot	per bot.	3	3	3	4	3	3	3	4	Sardine	per ton	19	0	20	0	19	0	20	0
Caraway	per lb.	3	4	10	0	3	4	10	0	OLIVE, Seville	"	40	0	0	0	40	0	0	0
Cassia	"	3	0	3	3	3	0	3	3	" Tunis	"	0	0	0	0	0	0	0	0
Cinnamon	per oz.	1	3	4	0	1	3	4	0	" Levant	"	0	0	0	0	0	0	0	0
Cinnamon-leaf	"	0	1½	0	2	0	1½	0	2	" Mogador	"	32	10	0	0	32	10	0	0
Citronelle	"	0	½	0	1½	0	½	0	1½	" Spanish	"	38	0	39	0	38	0	39	0
Clove	per lb.	5	0	5	3	5	0	5	3	" Sicily	"	37	10	0	0	37	10	0	0
Juniper	"	1	6	1	9	1	6	1	9	COCOANUT, Cochinchina ..	"	32	0	33	0	32	0	33	0
Lavender, Exotic	"	5	10	7	6	5	10	7	6	" Ceylon	"	26	5	26	15	26	0	26	15
" Mitcham	"	40	0	53	0	40	0	53	0	" Mauritius ..	"	23	0	0	0	26	0	0	0
Lemon	"	9	0	11	0	9	0	11	0	PALM, Lagos	"	24	0	0	0	21	0	0	0
Lemon-grass	per oz.	0	1½	0	1½	0	1½	0	1½	LINSEED	"	21	2/6	21	10	21	0	21	10
Neroli	"	7	0	13	2	7	0	13	2	RAPESEED, English, pale	"	22	15	0	0	22	15	0	0
Nutmeg	"	0	5	0	6½	0	5	0	6½	" brown	"	21	15	0	0	20	15	0	0
Orange	per lb.	8	0	9	6	8	0	9	6	COTTONSEED, refined ..	"	18	0	19	0	18	0	18	0
Otto of Roses	per oz.	13	0	22	0	13	0	22	0	LARD	"	33	10	34	10	33	10	36	0
Patehoul	"	2	1	0	0	2	1	0	0	TALLOW	"	23	0	27	0	23	0	29	6
Peppermint: American	per lb.	12	0	12	6	12	0	12	6	TURPENTINE, American	per cwt.	24	0	24	6	25	3	25	6
(H. G. Hotchkiss) ..	"	16	0	16	6	16	0	16	6	PETROLEUM, refined ..	per gall.	0	5½	0	5½	0	5½	0	5½
English	"	30	0	32	0	30	0	32	0	" Spirit	"	0	7½	0	7½	0	6½	0	
" (Jakson)	"	39	0	45	0	39	0	45	0	SEEDS.									
Japan	"	8	0	8	9	8	0	8	9	CANARY	per qr.	44	0	62	0	43	0	70	0
Menthol crystals ..	"	6	0	15	0	6	0	15	0	CARAWAY, Mogadore ..	per cwt.	31	0	0	0	31	0	0	0
Rosemary	"	1	4	2	11	1	4	2	11	" German, &c.	"	35	0	37	0	26	0	37	0
Sassafras	"	2	5	0	0	2	5	0	0	CORIANDER	"	14	0	19	0	14	0	19	0
Spear-mint	"	12	0	14	0	12	0	14	0	HEMP	per qr.	38	0	0	0	38	0	0	0
Thyme	"	1	6	4	6	1	6	4	6	LINSEED, English	"	42	6	0	0	42	6	0	0
Mace, expressed	per oz.	0	2	0	0	0	2	0	0	" Calcutta	"	40	9	0	0	40	3	41	0
OPUM, Druggists' kinds	per lb.	0	0	0	0	8	6	10	0	" Bombay	"	43	0	0	0	42	6	43	0
QUASSIA (bitter wood)	per ton	80	0	95	0	80	0	95	0	" Russian	"	41	6	0	0	41	6	0	0
RHUBARB, China, good	"	2	3	2	9	2	3	2	9	MUSTARD, brown	per bush.	5	6	0	0	5	6	0	0
and fine	per lb.	0	8	1	3	0	8	1	3	" white	"	7	6	9	6	7	6	9	6
Middling to fair ..	"	35	0	60	0	35	0	60	0	POPPY, East India	per qr.	33	0	0	0	33	6	34	0
ROOTS—Columba	per cwt.	25	0	28	0	25	0	28	0	RAPE SEED	"	0	0	0	0	30	6	33	6
China	"	21	0	28	0	21	0	28	0	SPICES.									
Cus-Cus	"	7	6	11	6	7	6	11	6	CASSIA LIGNEA	per cwt.	24	0	0	0	24	0	24	6
Gangal	"	17	0	18	0	17	0	18	0	" Vera	"	19	0	25	0	19	0	25	0
Gentian	"	45	0	50	0	45	0	50	0	" Buds	"	41	0	41	6	41	0	41	6
Gentian	"	44	0	0	0	44	0	0	0	CINNAMON, Ceylon:	per lb.	0	8	1	9	0	8	1	9
Pellitory	per lb.	0	3	1	2	0	3	1	2	" 1st quality	"	0	7½	1	3	0	7½	1	3
Ithany	"	1	11	2	1	1	11	2	1	" 2nd ditto	"	0	6½	1	0	0	6½	1	0
Seneka	"	3	3	3	5	3	3	3	5	" 3rd ditto	"	0	3	1	0	0	3	1	0
Snake	"	38	0	41	0	38	0	41	0	" Tellicherry	"	0	13	0	9½	0	3	0	9½
SAFFRON, Valencia	"	24	0	28	0	24	0	28	0	" Chips	"	0	10	0	6	0	10	0	6
SAFRAPARILLA, Mexican	"	0	4½	0	6	0	4½	0	6	CLOVES, Penang	"	0	10½	1	0	0	10½	1	0
Guayaquil	"	0	7	0	10	0	7	0	10	" Amboy	"	0	10	0	10½	0	10	0	10½
Honduras	"	1	2	1	5	1	2	1	5	" Zanzibar	"	0	9½	0	10	0	9½	0	10
Jamaica	"	1	0	1	10	1	0	1	10	GINGER, Jam., fine	per cwt.	73	0	83	0	40	0	80	0
SAFFRAS	per cwt.	11	0	0	0	11	0	0	0	" Ord. to good	"	33	6	65	0	36	6	65	0
SCAMMONY, Virgin	per lb.	18	0	26	0	18	0	26	0	" African	"	23	0	0	0	20	0	28	0
second and ordinary ..	"	5	0	17	0	5	0	17	0	" Bengal	"	15	6	0	0	15	6	0	0
SENNA, Bombay	"	0	1½	0	3	0	1½	0	3	" Malabar	"	19	0	0	0	19	0	0	0
Tinnivelly	"	0	2	1	0	0	2	1	0	" Cochin	"	25	0	55	6	25	0	53	0
Alexandria	"	0	2	1	6	0	2	1	6	PEPPER, Black, Malabar	per lb.	0	7½	0	7½	0	7½	0	7½
SPERMACETI, refined ..	"	1	11	2	0	1	11	2	0	" Singapore	"	0	7½	0	0	0	7½	0	0
American	"	1	10	0	0	1	10	0	0	" White	"	0	11½	1	0½	0	11½	1	0½
SQUILLS	"	0	2½	0	3½	0	2½	0	3½	" Cayenne	"	1	0	1	8	1	0	1	8
GUMS.																			
AMMONIAC, drop	per cwt.	2	0	2	5	2	0	2	5	" Mace, 1st quality	"	1	8	2	1	1	8	2	1
ANIMI, fine washed	"	14	10	16	0	14	10	16	0	" 2nd and inferior	"	1	2	1	9	1	2	1	9
" sorts	"	11	0	14	0	11	0	14	0	NUTMEGS, 78 to 60 to lb.	"	2	4½	3	4½	2	4½	3	4½
ARABIC, pale picked ..	"	4	0	5	5	4	0	5	5	" 90 80	"	1	11	2	2	1	11	2	2
" sorts, mid. to fine ..	"	1	0	3	15	1	0	3	15	" 132 95	"	1	5	1	9	1	5	1	9
TURKEY, pick. gd. to fin.	"	12	0	17	0	12	0	17	0	PIMENTA	"	0	2½	0	2½	0	2½	0	2½
second & inferior	"	8	10	11	10	8	10	11	10	VARIOUS PRODUCTS.									
" sorts	"	8	0	8	15	8	0	8	15	COCHINEAL—									
BENJAMIN, Siam, 1st	"	18	0	24	0	14	0	35	10	Honduras, black	per lb.	1	6	1	10½	1	6	1	10½
& 2nd	"	3	5	12	0	3	5	12	0	" silver	"	1	3	1	6	1	3	1	6
Sumatra, 3rd to 1st	"	28	6	36	0	28	6	36	0	Mexican, black	"	1	4	1	9	1	4	1	9
ASAFOETIDA, cm. to fair	"	5	d.	s.	d.	5	d.	s.	d.	" silver	"	1	3	1	5	1	3	1	5
COPAL, Manila	"	16	0	90	0	16	0	90	0	Teneriffe, black	"	1	2	1	5	1	2	1	5
Angola, red	"	145	0	152	6	145	0	152	6	" silver	"	1	3	1	3½	1	3	1	3½
DAMMAR, pale	"	70	0	80	0	70	0	80	0	GALLS, Tky blue	"	47	6	57	6	47	6	57	6
EUPHORBUM	"	14	0	20	0	14	0	20											



Memoranda for Correspondents.

Always send your proper name and address: we do not publish them unless you wish.

Write on one side of the paper only; write early; and devote a separate sheet of paper to each query if you ask more than one, or if you are writing about other matters at the same time.

If you send us newspapers please mark what you wish us to read.

Ask us anything of pharmaceutical interest: we shall do our best to reply.

The Post-Card Competition, No. 5.

SIR,—I notice in your issue of July 10 your offer of a guinea for competition for the best suggestion for medicine chests for materfamilias to take to seaside, and would merely remark that it is usual to find in all seaside towns such an animal as a chemist, and that the said animal is to a certain extent dependent for his crust on the medicaments required for the ailments and accidents which may occur during M. F. and family's visit. A SEASIDE CHEMIST. (179/36.)

[This criticism is plausible, but we venture to think unsound. Chemists at present do nothing like what they might do to encourage the public to take medicine. Once introduce a medicine chest into a family and it is a perpetual blessing, if not to the family, at all events to the chemist, in whatever locality it may arrive. When we consider the vast masses of medicine which people are induced to take by advertisements of proprietary articles, or by the prettily arranged homœopathic cases, we are amazed at the apathy with which pharmacists generally treat the native craving of ordinary mortals for physic of some kind, if not to take themselves to administer to their friends and relations. Moreover, "Seaside Chemist" is quite at liberty to propose and prepare a like case for the family to take home with them, and we will gladly accept any description of such a case in our competition.]

Bacterium Termo and Consumption.

SIR,—Your impression of June 26 was forwarded to me yesterday by a patient. On page 627 I notice the strictures of one who is styled Dr. Francis Troup, and on page 640 the letter of Mr. W. B. Capper.

I am sure your desire is only to advance the cause of justice and truth, and to relieve the sufferings of afflicted humanity, and therefore I ask the insertion of this letter.

In reference to page 627. The writer asserts "that the sputum of a phthisical patient who (not which) presumably (I ask reflection on that word) was a subject of bacterium treatment, after putrefaction for fourteen months, still contained bacilli," and concludes, "This experiment completely demolishes the supposed utility of the bacterium termo treatment."

1. "Presumably" means probably; that is, it might be so, or it might not; but there is no certainty. He does not *know* if bacterium treatment was adopted or not. I have no hesitation in writing that no sane person could draw a positive conclusion from such premisses—it would be illogical in the extreme: it would be unreasonable. I do not fear that any of your readers will on reflection be influenced by such an absurdity.

2. We read "was a subject of bacterium treatment, &c., for fourteen months." I was not aware that Cantani had made his discovery above half that time. The assertion, therefore, cannot have reference to his treatment.

3. In a letter I received from the distinguished Cantani occur the following words:—"Le B. termo que m'a servi si bien contre la phthisie est une espèce particulière du genus

Termo." With only the presumption that bacterium was employed at all, we have not the shadow of a proof that the experiment was tried with the peculiar species of Cantani.

4. I have looked into the "Medical Directory" and cannot find the name of Francis Troup as possessing any medical qualification whatever, much less that of M.D., the highest diploma in the profession.

5. In opposition to this illogical statement I could supply hundreds of letters from patients, all detailing the great advantages received from the bacterium treatment: the increase in weight, in strength; the cessation of nightly perspirations; the decrease of cough and expectoration; the multiplied indications of the returning tide of health; and one fact is worth, your readers will allow, a thousand presumptions.

To Mr. Capper's letter I would now briefly refer. He writes:—"After three inhalations the system was completely disorganised—loss of appetite, furred tongue, total prostration."

There is no such effect from bacterium. We have the symptoms of a passing bilious attack, probably produced by the very hot weather. It was an unfortunate coincidence, but had nothing to do with the treatment. Having hundreds of patients, not one has complained of such a result. Moreover, this same lady had inhaled bacteria before; no such result followed; on the contrary, she wrote to her uncle, who told me her words were, "The bacteria must have devoured the bacilli, for my cough is gone."

I do not question that Mr. Capper's letter was his honest belief at the time, but for that belief he had not a true foundation; and to attribute to bacterium what is not its effect is calculated, when it appears in your widely read and justly appreciated paper, to raise doubts in the minds of sufferers, and to dissuade them from trying a remedy which, although but a short time known, has already resulted in restoring health and strength to many, and in snatching not a few who had been deemed incurable from the very jaws of death.

Yours faithfully,

W. D. LAMBERT, M.D.

166 Islington, Liverpool, July 9.

P.S.—I have purposely avoided the discussion whether the same effects should be expected from bacterium multiplying in the congenial temperature of a living lung and in the cold expectoration. It would be easy to prove the negative, but I have not time, and my letter is already too long.—W. D. L.

[The word "presumably" was ours. Dr. Troup's qualifications are, as given in the "Medical Register," 1886: Lic. R. Coll. Surg. Edin. 1848.; M.D. Univ. St. And. 1868.; Mem. R. Coll. Phys. Edin. 1883.—ED. C. & D.]

The Official and the Non-Official Mr. Schacht.

SIR,—Surely the Mr. Schacht who was complimented by the President of the Pharmaceutical Society on his splendid work in endeavouring to advance pharmaceutical education can have no connection with the firm who "sell the very finest drugs and medicines it is possible to produce, at prices which compare favourably with those of all competitors;" if so, perhaps he will supplement his work by favouring us with his ideas of pharmaceutical remuneration, and explain his recent conversion to "store" views. I am,

Worthing.

M. P. S. 179/15.

The Surrender of Science.

SIR,—I read with surprise in your last issue the news that Giles, Schacht & Co. had started "cutting."

I am one of those who, having breathed the atmosphere of No. 17 Bloomsbury Square, imbibed the idea that an extensive knowledge of scientific pharmacy would make one independent of such methods; and have, consequently, cherished a great admiration for those in our ranks who are known to excel in science. This idea, more than any other consideration, has made me stand out against charging "store prices," although I know that almost every house in the suburb where I live is supplied with drugs from one or other of the London stores. If you do not object, I should be glad to hear the opinions of others on the wisdom, or otherwise, of reducing prices.

Yours faithfully,

SUBURBAN.

Hop Bitters Label Again.

28/180.—W. T. M. asks for our opinion in regard to a label for a packet of herbs which, as we understand, is supplied from stock by some printers, because "W. T. M." says: "If your opinion is against it, I think the printers ought to be prevented offering these labels to the druggists." We confess we have not such a veneration for our own opinion as to expect that all printers are to stop business if we disapprove of their labels in any particular instance. The label now sent us is headed, "Ingredients for making Hop Tonic Bitters, 1s. per packet." Instructions follow, from which it appears that a pint of bitters can be made from the packet. We have not the least idea whether the Hop Bitters Company would regard this label as an infringement of their rights or whether any court would grant an injunction against any person using it. This label can hardly be said to be a colourable imitation of the Hop Bitters label—one article is a liquid, and the other is a solid. And yet it seems to us that the purpose of the label is to induce customers to believe that by buying this packet of herbs they will be able to make for 1s. what would otherwise cost them 4s. 6d. Chemists who are anxious to avoid anything like misrepresentation can easily do so by calling their packets of herbs simply "Ingredients for Tonic Bitters," omitting the word "Hop"; but we cannot undertake to say that they are legally bound to do this.

Whitworth Red Bottle.

In addition to the formula published last week we have received several from correspondents.

178/59.—George Walker states that the following is the recipe for what he sells.

Olei origani	3j.
Spt. vini gallic (S.G. 0.920)	0j.
Cocei caeti pulv. q.s. to colour.	

Macerate for a few days, and filter.

Mr. Walker states that methylated spirit is used by some, but he considers this objectionable, because the mixture is also taken internally in 5 to 20 drop doses. It retails at 6d. the ounce, labelled as follows:

The best Rubbing Bottle in the World is the

**WHITWORTH
RED BOTTLE.**

The Whitworth Red Bottle has been used for the last fifty years for Broken Legs, Arms, Sprains, Bruises, Rheumatism, Stiff Joints, Lumbago, Gout, Stiff Neck, Chilblains, Neuralgia, Sore Throats, Black Eyes, Broken Heads, &c.

NAME AND ADDRESS OF SELLER.

In BOTTLES, 6d., 1s., and 2s. 6d. each.

[We may state that this label would necessitate a patent medicine stamp.]

(65/178.) Whitworth Bottle. *Lancashire Lad* says:—"The following is a formula from which I have prepared and sold many a gallon of the above in the neighbourhood of Whitworth, Lancashire, where the preparation (or a similar one) is supposed to have emanated:—"

Camphora	3vj.
Ol. origanum	3vj.
Rad. anehusa	3j.
Spt. meth. ad	3lxxx.

Macerate a few days, and filter.

178/28. J. M. J. used the following formula when in business in Lancashire, near Whitworth. The "bottle" had a large sale, and was used both for internal use and external, the methylated spirit notwithstanding:—

Camphor	3ij.
Tr. lavand. co.	3i.
Ol. origani	3j.
S. V. M. ad	0j.

Mix.

Cultivation of Medicinal Plants. *Inquisitive*, 62/178, Birmingham says:—"I procured some mentha arvensis plants from Mr. Christy, of London, which are planted in a clay soil garden in the Midlands, where they are doing well. When I have sufficient to make a small quantity of menthol I shall do so. Information respecting the process of making it into cones would be highly esteemed."

The Lamplough Explosive.

I may as well add my experience of Lamplough's Saline. During the last six months I have had, out of a stock of one gross, thirty-nine explosions, which, as you may imagine, has knocked the profit off the whole lot, and also damaged other goods which were stored in the same cupboard.

July 7. T. D. (Smyrna). (178/35.)

Not Lamplough this time.

SIR,—On Saturday last I had occasion to open a pottle of magnes. citras. gran. eff. super quality, and when I had eased the cork a little it was blown violently out, and the magnesias was forced out of the neck of the pottle and scattered equally round in all directions to a distance of four or five feet. I think I swept up between two and three ounces. The pottle was not injured in any way.

This seems to me a curious occurrence, and could not be due to the formation of peroxide of chlorine, as suggested in the case of Lamplough's Saline. C. C. (179/71.)

July 13.

Crow-killing. In reply to 11/172, W. P. writes:—"Crows are fond of eggs. Knock the crown off a hen's egg and mix in with the yolk and white a grain or two of strychnine; plant this in the field infested with these birds. That's how we settle birds in Yorkshire."

P. B. writes:—"If 'Nero' must use poison, let him put some strychnine into a number of eggs, and place these on the tops of the fence posts or on posts specially erected through the field. Crows are partial to eggs, and eat them whenever they have an opportunity. No other birds that any care need be taken to avoid poisoning will eat the eggs, which on the posts are safe from dogs."

[We publish these suggestions with a certain degree of terror lest they should be adopted. The distribution of eggs containing strychnine about fields and open places would inevitably be followed by quite a number of funerals of children and hungry persons generally, and the practice is fortunately prohibited by the "Act to prohibit the placing of poisoned flesh and poisonous matters on plantations, fields, &c." 27, 28 Vict., cap. 115.]

4/14. *Equus*.—Dentistry.—(1) Good works on mechanical dentistry are Cole's "Manual of Dental Mechanics," and Hunter's "Mechanical Dentistry," the latter published by Crosby Lockwood & Co.

(2) Yes, and you take the risk.

(3) Soap Making.—You will get full directions in our DIARY for 1882, wherein is reprinted a paper by Mr. Menzies which originally appeared in our 1880 volume. No machinery is required.

71/178. *Subscriber*.—The Manufacture of Bone Manure can hardly be made profitable on a small scale. What is called "bone manure" is bones which have been previously boiled, generally by glue makers, and ground in a mill. The boiling operation may be controlled by the urban authorities under the Public Health Act, and the grinding can only be carried out with machinery. Bone manure is sown with the seed in a drill; from thirty to seventy bushels per acre are applied, chiefly for wheat and turnip crops on light soils. Sometimes the bone dust is rendered soluble by mixing with sulphuric acid so as to convert the phosphate into a superphosphate, but this is not usual. Bone ash imported from South America is rich in phosphates, but deficient in nitrogen, and is generally used for mixing with other artificial manures.

That also requires grinding and mixing with sulphuric acid. It is very likely that a judicious mixture of superphosphate with some sulphate of ammonia could be made which would have a good effect for garden manure, and such a compound would be a saleable article in the country; but a series of judicious experiments ought to be carried out to test the properties of different mixtures on different soils and for different crops, and we do not know where to look for any record of such experiments. Most garden ground is rich with the manuring of many years; in such cases the stimulating effect of artificial manures is very marked.

178/50. *Antonio Vallegas* (Madrid).—**Hæmoglobin**.—The directions which we gave were for the preparation of crystalline hæmoglobin. The following is the method employed for preparing amorphous hæmoglobin. Separate the fibrine from the blood by whipping it for several minutes with a stick and straining, then add to the strained liquor a mixture of one volume of saturated solution of common salt and nine volumes of water, which precipitates the red corpuscles and some other matters. Well wash this with the saline mixture, then agitate it with three times its weight of water and half its weight of ether: the water dissolves the hæmoglobin and some phosphates and chlorides, and the use of the ether is to dissolve out the cholesterol. Next draw off the ethereal solution and treat the aqueous portion with subacetate of lead solution and alcohol, which precipitate the colouring matter in combination with lead. This precipitate is to be collected in a filter and washed with alcohol, then suspended in water, and carbonic acid gas passed through it to decompose the lead compound. When this is done, filter the solution and evaporate carefully at a temperature not exceeding 40° C., whereby the hæmoglobin, not quite pure, is obtained in scales.

175/59. *Percolator*.—**Tincture of Cantharides**.—Much less than a pint of proof spirit will exhaust three-quarters of an ounce of cantharides.

179/53. *M. C.*—See a paper entitled "Hints to Minor Students" in our last volume, April 3, page 257.

179/17. *W. H. J.*—(1) **Kola Nut**.—The dose is from 10 to 30 grains. The liquid extract or valoid is given in ten 30-minim doses. Other preparations are given in equivalent quantities.

(2) **Fly-Papers**.—"Is it necessary to register the sale of fly-paper? Do they come under Schedule 1, as they generally contain arsenic?" By an order of Council, December 20, 1869, "every compound containing any poison within the meaning of the Pharmacy Act, 1868, when prepared or sold for the destruction of vermin," is a poison within the meaning of that Act. If it were maintained that fly-papers are not a vermin-killer, the fact remains that they are saturated with arsenic, and therefore their sale is a sale of arsenic. Consequently fly-papers should only be sold under the proper regulations, but we are not aware that this has ever been done, although it could be enforced. Vermin-killers are in the second part of Schedule A, arsenic in the first.

(3) See reply to another correspondent.

179/54. *C. G. K.*—Full directions for the use of cocaine in teeth extracting were given in our issue of May 1, page 387.

177/24. *Chio*.—As far as can be judged, the sample of Chian turpentine which you forward is perfectly good. Of course it has hardened with age, but the odour on heating is characteristic. It does not matter whether the hard or soft variety be used—indeed, the drug is now practically discredited.

178/56. *A. M. K.*—See reply to *J. J. J.* on page 642, June 26 issue. If you wish to try the method we can give you full details.

51/179. *Gordon*.—We do not care to discuss the delinquencies of other journals in these columns.

3/5. *Pharmacist*.—**Scheffer's Pepsine** is made by macerating the mucous membrane of fresh hog stomach, well cleaned and finely chopped, for several days in water acidulated with muriatic acid, the mass being frequently stirred meanwhile. Strain off the liquid and set aside for a day to clear. To the clarified liquid add an equal measure of a saturated solution of common salt, which separates the pepsine, and this after a few hours may be removed by a spoon, drained on a cotton cloth, and finally pressed to remove as much as possible of the chloride of sodium. To form **Saccharated Pepsine**, the pepsine as taken from the press is triturated with a weighed quantity of finely powdered sugar of milk, and when all dry weighed again, the quantity of milk sugar subtracted, and the weight of pepsine thereby ascertained. The mixture is now tested to see how much coagulated albumen it will dissolve in five or six hours at a temperature of 100° F., and is then standardised by the addition of more milk sugar so as to produce a preparation of which 10 grains will dissolve 120 grains of coagulated albumen in the time named. For full details of the process see "Year Book of Pharmacy," 1872, page 268.

66/179. *Entre nous*.—The granting of holidays, unless expressly stipulated for, must be regarded as an act of grace on the part of employers. We cannot therefore express any opinion as to whether you are, or are not, "entitled" to such.

70/179. *W. H. T.*—The treatise is not likely to be republished this year.

The Late Election.

SIR,—The following error in your remarks on the new Parliament, although of little importance, may as well be corrected. You state that "the unsuccessful opponent of Sir H. Roscoe at Manchester, Mr. Peter Royle, also follows the profession of medicine;" the fact being that Sir Henry was opposed by Col. Towler, the proprietor of the *Manchester Courier*. Dr. Royle was the unsuccessful candidate at the General Election, 1885. Yours faithfully,

CHARLES SWINN. (180/1.)

125 Upper Moss Lane, Manchester, July 13.

37/180. *Cymro*.—You as a registered chemist may legally own a branch business twenty miles away from where you live, and there is no legal requirement that you should have a qualified person to manage it.

179/1. *C. W. Abbot* (Baltimore).—**Soluble Essence of Ginger**.—This, which we presume is the preparation you refer to, is made from strong tincture of ginger (1 in 1), prepared from the root by percolation with rectified spirit. One volume of this is mixed with an equal volume of water, and then shaken up with two ounces of light carbonate of magnesia occasionally during a day, until, in fact, the clear tincture mixes with water without producing milkiness. It is then filtered, and the magnesia on the filter washed with a little proof spirit. For ginger ale the essence is generally flavoured by the addition of various flavours, such as vanilla, pine-apple, and lemon, and it is not unfrequently fortified by the addition of capsicum.

There are other methods of preparing the essence, but the foregoing is one of the simplest, and gives very good results when carefully done.

37/180. *Cymro*.—**The Sale of Vermin-killers**.—There is an awkward doubt about the law concerning these. Strychnine or preparations of strychnine are undoubtedly in Part 1 of the Schedule, that is, sales should be registered. But by the order in Council published in the *Gazette* on December 21, 1869, "Every compound containing any poison within the meaning of the Pharmacy Act, 1868, when prepared or sold for the destruction of vermin," was declared a poison, but was not put into Part 1 of the Schedule. The Pharmaceutical Council in their calendar assume that any vermin-killer containing a poison of the first part of the Schedule is to be treated as a poison of the first part; and this is the course quite properly taken by most careful

chemists. But it is not quite certain that this is the legal requirement, though a conviction was obtained at Worcester some time ago against a chemist for selling a vermin-killer containing strychnine without registration.

177/35. *T. H.*—**Restorative Hair Lotion.**—The requirements of your label are very extensive indeed, and it is not quite possible to "strengthen, beautify, and promote the growth of the hair; and to remove scurf, dandruff, and other impurities from the skin of the head" in a single operation, and at the same time prevent headache. The following formulae, however, are for generally useful hair lotions, both of which are refreshing and cleansing applications:—

Acetic acid	3v.
Spirit of chloroform	3vj.
Eau de Cologne	3vj.
Glycerine	3j.
Water to	3l.

Place the whole in a Winchester quart bottle along with two drachms of asbestos. Then shake frequently until clear, and filter. The lotion may be slightly coloured with saffron or cochineal, and any other perfume than eau de Cologne may be employed, but the above proportion of spirit should be retained.

Solution of ammonia (B.P.)	3j.
Mindererus spirit	3j.
Tincture of cantharides	3ss.
Spirit of rosemary	3iss.
Rose water to	3viij.

A clear solution of the spt. of rosemary and rose water may be made by shaking up with a little magnesia. Caramel should in this case be used to colour. These are very simple preparations, and are sometimes used together alternately with excellent results:—

Tinctura Iodi Decolorata.

Iodine	3j.
Strong solution of ammonia	3iiss.
Rectified spirit to	3cij.

Mix and expose to the light for two or three weeks until water white. It does not, of course, contain free iodine, but is a solution of iodide and iodate of ammonium. The decolorised tincture used on the Continent contains sodium thiosulphate, but does not differ therapeutically from the above.

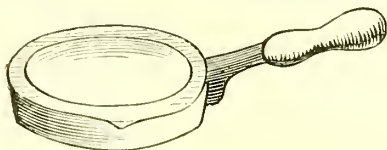
178/9. *Pharmacien* (Boulogne).—**Carbolised Dentifrice.**—We have not examined the preparation which you mention, but the following formula is what you want:—

Carbolic acid	3ij.
Powdered orris	3ss.
" cuttle-fish bone	3ss.
Precipitated chalk	3ij.
Carbonate of magnesia	3v.
Oil of wintergreen	8 drops
" peppermint	2 "
Carmine	3 grains

Rub up the carbolic acid with the cuttle-fish bone and add the chalk, perfume, and carmine, triturate thoroughly for ten minutes, mix in the other ingredients, and sift.

DISPENSING NOTES AND QUERIES.

Useful Water-bath.—Below we figure a small handy water-bath, which is exceedingly useful in making suppositories, small quantities of ointments, or for use in any operation which requires moderate heat to be raised quickly.



The bath may be made of tin or copper. The diameter at the outside may be 4 inches, with a rim of half an inch projecting towards the inside and provided with a small outlet

for pouring out the water. The depth should be about 1 inch. The handle is best made of wood so that the bath may be lifted without fear of burning the hand. Half an ounce of water is sufficient to use for a small operation. A series of rings may be got so as to take small dishes, such as watch-glasses. A bath of the size described, made of copper, costs about half-a-crown.

Extracts in Suppositories.—*M. Communeau*, Chateaudun (*Union Pharm.*), recommends to melt the cocoa butter, place the vessel containing it in cold water, dissolve the extract in glycerine, and combining this with the melted cocoa butter, pour into moulds when the mixture is of the consistence of treacle. In a few minutes the suppositories are solid enough to be placed in cold water while still in their moulds, and five minutes later they are finished and the paper cases can be removed. A dozen suppositories may be easily made in a quarter of an hour in this manner.

A Question of Percentage.

Sol. cocaine mur. (10 per cent.) 3ij.
Sig. as directed.

This solution not being kept in stock, how should one proceed to dispense the above so as best to secure accuracy and avoid waste? "GRAIN MEASURE."

[The difficulty which "Grain Measure" hints at is whether the solution is to contain 10 grains in 100 minims, or 10 grains in 100 grain measures. In the former case, the two fluid drachms of solution would contain 12 grains of cocaine hydrochlorate; in the latter, as near as possible, 11 grains. Which rule should be followed, and what is the general rule in practice?]

178/7. *Student.*—**Inf. Buchu Cone.** is generally somewhat syrupy, but the gentian infusion is not so, unless it contains too little spirit. Both should contain not less than 3 oz. of rectified spirit to the pint. Make the infusions by double maceration. In the case of buchu infuse half a pound of the leaves with 15 oz. of boiling water for six hours, then strain and press, but not too strongly. Again infuse for two hours with as much boiling water as is required to make 17 oz., strain and press. After cooling add 3 oz. of rectified spirit, allow to stand for twenty-four hours and filter. A similar method may be employed for gentian infusion.

A Bismuth Mixture.

SIR,—Would you kindly inform me what appearance the following mixture should have. I obtained a perfectly clear mixture, but had it returned as not like the last. The patient said in the previous mixtures there had been a sediment about 1½ inch in depth from the bottom. I tried both 1867 and 1885 liq. bismuth.

Liq. bismuth 1885 gave the brightest mixture. It had been dispensed on several occasions by a first-class house and always with the same result.

Liq. bismuthi	3iss.
Potass. chlor.	3ij.
Ammon. carb.	3j.
Ac. hydrocyan. dil.	3j.
Tinct. zingib.	3j.
Inf. calumb. ad	3x.

Sig.—3ss. twice daily.

PERPLEXED. (179/20.)

[We also get a clear mixture, which is what it should be, for the ammonium carbonate does not affect the bismuth solution.]

Information Wanted.

63/174. *J. T. R.* wants the addresses of makers of white lae in London or provinces.

4/14. *Equus.*—Where to obtain a Toilet Soap Mould.

17/179.—*W. H. J.* wants to hear of poison-guards for shop bottles.

44/180.—*Well-wisher* wants the address of someone who prepares botanical slides for dissolving-view apparatus.

EXTRA QUALITY GINGER BEER POWDERS, "RISING SUN" BRAND. Retail 3d. per Packet.

Superior to all others, being made from selected Jamaica Ginger, and consequently of great strength and fine aroma.

Each packet is in cardboard box, wrapped in foil, so that the powder can be kept for a lengthened period without deterioration.

They are nicely got up, and there is no name on label, merely the brand as below to prevent imitations. This enables them to be sold as seller's own article. Where a quantity is taken customer's own name can be printed

with any alteration of label required. Correspondence on this point invited.

These Powders have been in use for over 30 years, and none other sell so freely, are such good value for money, or give such universal satisfaction, whilst the wholesale price will compare favourably with other makes.

A large trade can be done by selling to small shopkeepers, who will readily pay 1/9 to 2/3 dozen for them. Packed in outer boxes of 3 dozen each

PRICE 16/- GROSS NETT. ONE GROSS CARRIAGE PAID.

SPECIAL WHOLESALE QUOTATIONS FOR 5 GROSS AND UPWARDS.

PROPRIETORS:

W. KEMP & SON, HORNCASTLE.

London Agents—MESSRS. BARCLAY & SONS,

Who hold Stock, and supply at above price in London.

N.B.—Specially adapted for export.

FACSIMILE OF LABEL.

<p>Entered Stationers' Hall.</p> <p>3d.</p>	<p>EXTRA QUALITY.</p> <p>Ginger Beer Powder.</p> <p>"Rising Sun" Brand.</p> <p>Prepared from selected root of the Finest Jamaica Ginger. This packet will make two gallons very superior Sparkling Ginger Beer, with a full delicious flavour. Full directions inside.</p> <p>Price 3d. per packet.</p> 	<p>3d.</p> <p>This Label Copyright.</p>
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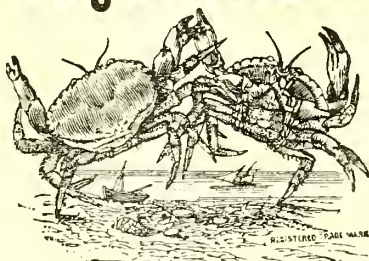
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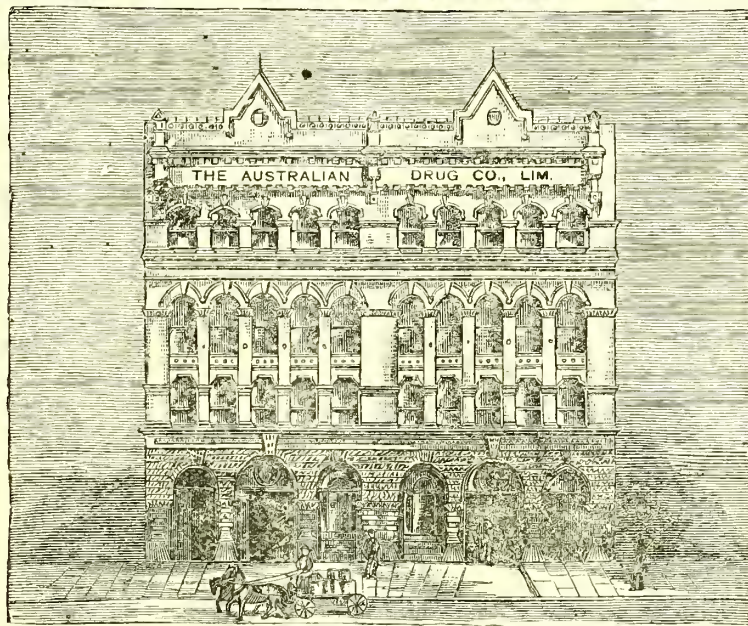
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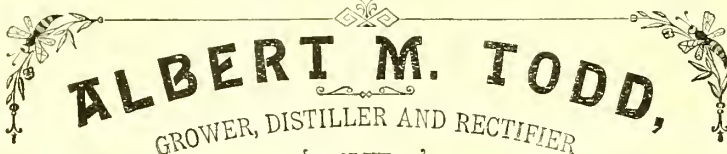
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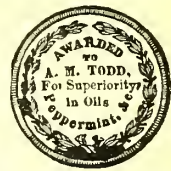


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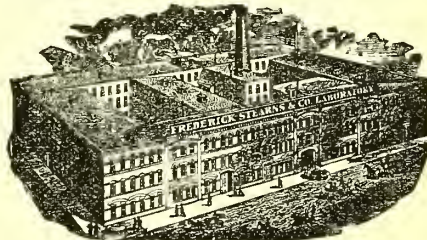
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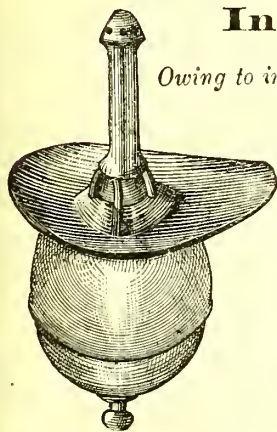
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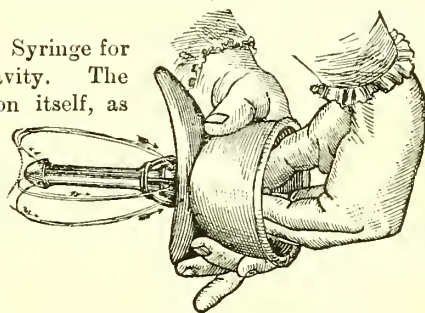
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Our Extra Steam Refined quality, is in firm, hard, dry and snowy white crystals, entirely free from oily contamination (and therefore of the highest melting point.) As the original and largest manufacturers in the world of the true Japan Menthol, we guarantee our brand to be absolutely pure. Beware of substitutes. For full particulars, therapeutic uses, etc. see special circulars to be had on application.

PEPPER MINT

of a tarry and resinous nature which are objected to by some consumers are extracted. It is of water white colour, retaining its full aroma, pungency and strength and guaranteed absolutely pure and soluble in spirits of wine.

Yokohama,
Japan.

COCKING & Co.

Established
1863.

Commission Merchants, Wholesale Druggists and Manufacturing Chemists.

OTHER SPECIALITIES.

Cod Liver, Fish and Orange Oils, Vegetable Wax and Isinglass.

Monthly Market Report and detail circulars on application.

LONDON AGENTS:—SPIES BROS & Co., 106, Fenchurch Street.

Telegram Address—"COCKING YOKOHAMA."

CAMPBOR

This is the genuine essential oil as produced in the manufacture of the Solid Camphor of Commerce. Our brand is guaranteed to be the natural oil and not the fictitious mixture of refuse Camphor and Turpentine generally sold. Having made a special study of its manufacture we have succeeded in producing a colourless oil and entirely free from any smell. It is a remedy in Rheumatism, a good solvent of resins, and the most perfect article for the use of the essential oil distiller.

In the High Court of Justice, London, June 4th, 1886.
Before Mr. Justice North.

THE HOP BITTERS Co. v. H. PRATT, CHEMIST, YORK.

THE HOP BITTERS Co. v. W. PLATT, CHEMIST, MATLOCK BATH.

In these Actions the Plaintiffs, who carry on business at 41 Farringdon Road, London, and known as the Hop Bitters Co., sought to restrain the Defendants from infringing their trade-mark of "Hop Bitters." Mr. Aston, Q.C., and Mr. Theodore Dodd (instructed by Messrs. Seeley & Son) appeared for the Plaintiffs. The former, in opening the case, said this application was made on behalf of the Hop Bitters Co. in respect to their well-known Hop Bitters, and he now moved for an Injunction "to restrain the Defendants" from infringing the Plaintiffs' trade-mark and vending imitations until the trial of these Actions. Mr. Bardswell, on behalf of the Defendants, elected that the motions be treated as the trial of the Actions.

The Judge immediately granted the Hop Bitters Co. a perpetual Injunction against both Defendants, and that they be condemned to pay the whole of the costs.

CAUTION.—We direct attention to the Actions reported above, and have fully determined to ferret out all infringements of our rights and (without further notice) treat them in a like manner.

If any person vending an imitation of "Hop Bitters" is in doubt as to whether he is infringing the trade-mark and rights of the Hop Bitters Co., he has only to ask himself whether he ever put up and sold any form of so-called Hop Bitters of his own manufacture till we had created a demand and popularised Hop Bitters at an enormous expenditure of money.

We know what the answer must be to this question. We shall protect our rights to the fullest extent, and prosecute every person, be they whom they may, who attempts to trade on the reputation and popularity of Hop Bitters, by putting up imitations of any description whatever.

HOP BITTERS CO.

ROCHESTER, N.Y., U.S.A.
LONDON, ENGLAND.
TORONTO, CANADA.

ANTWERP, BELGIUM.
PARIS, FRANCE.
MELBOURNE, AUSTRALIA.

GOLD MEDALS—DUBLIN, 1882; BOSTON, 1883
LONDON (INTERNATIONAL EXHIBITION), 1884.

SIR JAMES MURRAY'S PURE FLUID MAGNESIA.

The ORIGINAL Article, as prepared by the Inventor, Sir James Murray, M.D.

For over 60 years in use as an excellent remedy in cases of
ACIDITY, INDIGESTION, HEARTBURN, GRAVEL, AND GOUT.

Sold by all respectable Chemists, in LARGE-SIZED Bottles (the 1s. size containing nearly
Double the quantity usually sold at that price), at 1/, 2/6, and 3/6 each.

CAUTION.—Observe that the Signature of the Inventor is on every label.

SIR JAMES MURRAY'S FLUID CAMPHOR

Is a valuable remedy in cases of SLEEPLESSNESS and WEAK NERVES. Bottles, 1/ and 2/ each.

SIR JAMES MURRAY & SON, Chemical Works, Temple Street, Dublin.
BARCLAY & SONS, 95 Farringdon Street, London.

J. F. MACFARLAN & CO.,

MANUFACTURERS OF

MORPHIA AND ITS SALTS,

AND ALL PRODUCTS FROM OPIUM.

PURE CHLOROFORM,

ANSWERING ALL THE TESTS OF THE BRITISH PHARMACOPŒIA.

ALSO, ANÆSTHETIC ETHER, ALOIN, BEBEERIN, CHRYSOPHANIC ACID, SALICIN

MAY BE HAD FROM ALL THE WHOLESALE HOUSES, AND AT

17 NORTH BRIDGE, EDINBURGH, AND 71 COLEMAN STREET, LONDON.

WYLEYS' GELATINE COATED OVAL PILLS.

The only Gelatine Coated Oval Pills of ENGLISH MANUFACTURE in the Market. Special List of REDUCED PRICES on application.

POWDERED DRUGS. All ground in our own Mills, and of Guaranteed Purity.

EXTRACTS (ENGLISH).

CONCENTRATED INFUSIONS AND DECOCTIONS. GRANULAR EFFERVESCENT PREPARATIONS.

GELATINE COATED HORSE BALLS (PATENTED).

Forwarded on application { PRICES CURRENT, LIST OF SPECIALITIES, PILL LIST (GELATINE OR PEARL COATED).

WYLEYS & CO., COVENTRY.

LONDON ADDRESS—1a BURY STREET, ST. MARY AXE, E.C.

DR. G. H. JONES, F.R.S.L., &c ,**SURGEON-DENTIST,****57 GREAT RUSSELL STREET, LONDON**
(Facing British Museum entrance),Will forward his New 64-page Pamphlet, entitled "PAINLESS AND PERFECT DENTISTRY," which contains a List of the Diplomas, Gold and Silver Medals, and other Awards obtained at the Great International Exhibitions, to any part of the world, gratis and post free. *Agents Wanted.***BROMIDIA**

(REGISTERED).

NEW HYPNOTIC.One Bottle 4/6 | One Dozen 40/
One Gross, 10 per cent. discount.

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BATTLE & CO., 38 SOUTHAMPTON ROW, LONDON, W.C.**PURE PRECIPITATED CHALK.***Cheapest Sellers in the Market.***Chemicals, Drugs, and Oils at lowest market rates.**

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EQUAL TO AND CHEAPER THAN VASELINE.

SANITARY FLUID AND SHEEP DIP,
THE CHEAPEST AND BEST DISINFECTANT.**GREASE, PITCH, ASPHALTE, AND ALL PRODUCTS OF TAR AND ROSIN.***Samples and Prices on application.***GRINDLEY & CO., POPLAR, LONDON, E.****SHARLAND & COMPANY,****WHOLESALE DRUGGISTS,****AUCKLAND, NEW ZEALAND.**

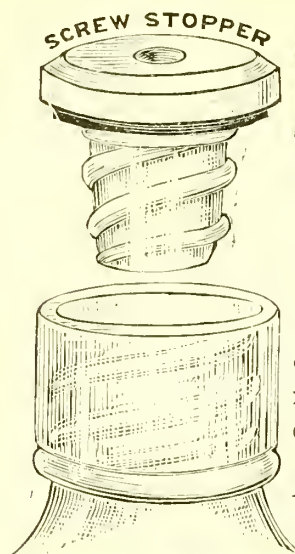
Samples may be sent for enclosure to Messrs. Horner & Sons, Mitre Square, Aldgate, London, E.

London References—Messrs. HORNER & SONS.

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When buying, compare my Perfumes with other makers', and buy the best.

GEORGE DURRANT, HERTFORD.*London Depot—Messrs. BAIRD BROS. & CO.***INDIARUBBER STAMPS.***Metal-bodied Rubber Types and Dating Stamps.**Nickel Silver Pocket and Desk Stamp complete, ready for use, from 2s. subject. Send for Lists and Terms.***M. LINDNER, Manufacturer,****170 FLEET STREET, LONDON, E.C.***** Chemists taking up the sale of my Specialties will be presented gratis with one Transparent WINDOW TICKET.***POWELL & BARSTOW,****5 Albion Place, Blackfriars Bridge, London, S.E.,****Late W. HURLSTONE & CO., Blackfriars Road and Vine Street, S.E.,****MANUFACTURERS TO THE WHOLESALE TRADE OF****ELASTIC GUM SURGICAL INSTRUMENTS.****WORKS, LAMBETH.****ESTABLISHED 1830.****LIQ. HUMULI CO. CONC.,****1 to 15 AQUA,****FOR TONIC BITTERS****(A FACSIMILE).***Sample and quotation free on receipt of three penny stamps.***J. HINTON KENDALL, Chemist, Blyth****YARDLEY & CO.'S CHOICE TOILET SOAPS.***Prize Medals Awarded for Purity and Excellence of Quality.***Manufactory—Ridgemount Street, Store Street, Tottenham Court****Road, LONDON.****Depot—32 Rue de l'Entrepot, PARIS.****TO LET.****S. SAINSBURY'S***Prepared from the finest***ENGLISH LAVENDER,***without any foreign whatever.***Lavender****176 & 177 STRAND, LONDON.***Prices from 1s. to 6s.***Water.****ASSAY FURNACES, &c.**
THE MORGAN CRUCIBLE CO.,*Sole Manufacturers of*
MORGAN'S and SALAMANDER CRUCIBLES,**BATTERSEA, LONDON, S.W.****All kinds of Crucibles in Plumbago, Clay, &c.,***Single and in Nests.***Muffles, Portable Assay and Melting Furnaces, &c.***Read "Assay Notes" in C. AND D., April 15, 1883.***"SPÉCIALITÉ" LIME JUICE****(NO MUSTY FLAVOUR).***For Sample and Terms***FELTOE & SONS,****ALBEMARLE STREET, LONDON, W.***Can be obtained through the Wholesale Houses.*



"GRAND DUCHESS" FEEDING BOTTLES

With Bent Necks and Glass Screw Stoppers, fitted with Best Black Indiarubber Fittings.

6d. ... 3/6 per dozen ... 36/- per gross.

IN 1-DOZEN WOOD BOXES.

1/- ... 7/- per dozen ... 72/- per gross.

1/6 ... 9/- " " ... 96/- " "

IN SEPARATE CARD BOXES, HANDSOMELY LABELLED.

"GRAND DUCHESS" Feeding Bottles, Pale Green Glass Bottles, with Bent Necks, fitted with White Indiarubber Fittings and Boxwood Top Cork, 24/- gross, or with Black Indiarubber Fittings ... 28/- "

If with White Glass Bottles, 3/- per gross extra.

Delivered to any Railway Station in London, or sample order to any London House for enclosure.

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The superior quality of NEWSOME'S ABSORBENT SURGEONS' LINT is universally admitted.

The V.B. Quality is quite pure and of great superficial area and exquisite softness.

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Specially Bleached and Grey Carded Cotton Wools, Absorbent and Bleached and Grey Waddings; also Sheet Waddings, Tow, &c.

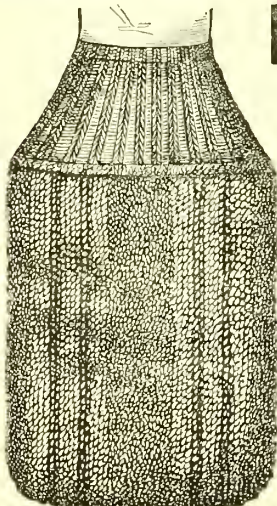
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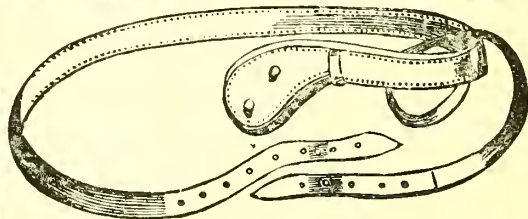
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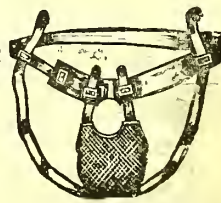


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COTTON SPINNERS AND MANUFACTURERS OF

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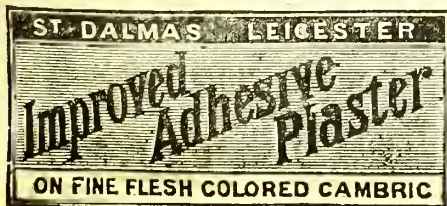
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SINGLE TRUSSES, 12/- DOZ.; DOUBLE DO., 21/- DOZ.

N.B.—All my Trusses are made exact shape to the body, and made from Best Sheffield Steel. For quality and price they are unequalled.

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SPREAD & MARGINAL
PLASTERS,
POROUS PLASTERS,
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BEST QUALITY.**FRANCIS'**
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Best preventive and cure of Bronchitis, Asthma,
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In GREEN &
WHITE GLASS,
and all
Kinds of Fittings.
Best Quality.

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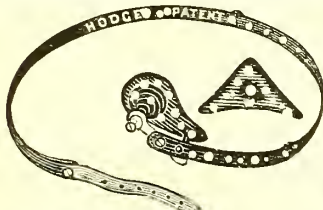
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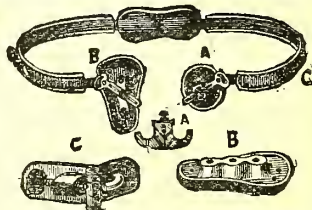
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And sold at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., 22s., and 33s. each Box or Pot.

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DISPENSING BOTTLES & PHIALS

AT LOWEST MARKET PRICES.

6-oz. and 8-oz., 8/ per gross; 3-oz. and 4-oz., 7/ per gross; White Phials at very low prices; Stoppered Rounds, Pomades, Graduated Measures, Panel Bottles, Castor Oil Bottles, Soda Water and Mineral Water Bottles, and all other kinds at very low prices. Write for Prices and see our Samples before ordering of any other house.

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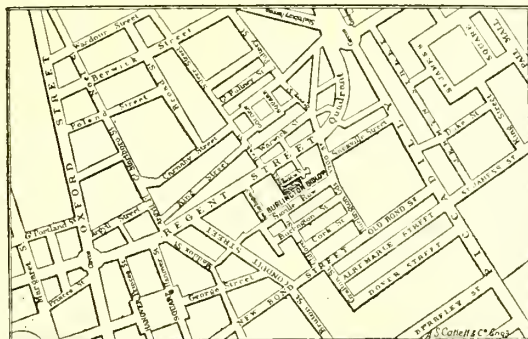
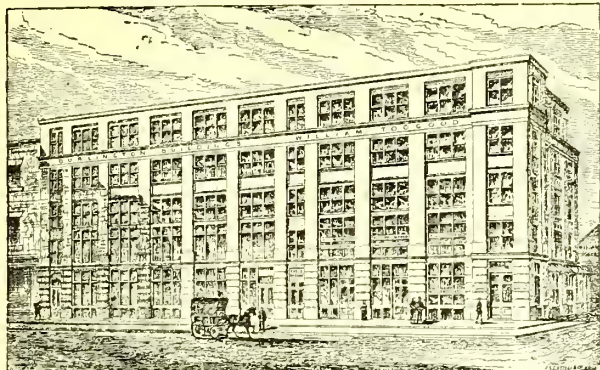
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SIRS,—On the occasion of advising you of our change of address, consequent, firstly, by the expiration of leases of premises which we have occupied for the past 56 years, and, secondly, by the necessity of obtaining greater accommodation to meet an increasing trade, we take the opportunity of thanking our friends for the support which has been accorded to us in the past, and to hope that we shall meet, not only with the same, but an increased support in our new premises.

Having greater facilities, our stock will be gradually extended to meet all requirements of the Trade, and our system of administration will be such as to secure the prompt execution of all orders entrusted to our care.

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Yours truly,

WILLIAM TOOGOOD.

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Specially prepared for Quinine Wine, does not deposit, will keep good in any climate, and well adapted for Export Trade. Supplied in Casks containing 9, 18, 30, 60, or 120 Gallons. Terms on application.

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This Wine is well adapted for Pharmaceutical Preparations, and is the strength ordered by the B.P. Price, in 6-Gallon Casks, 5/ per gallon; in 2-Gallon Jars, 5/6 per gallon, carriage paid. Casks charged 7/6, Jars 2/6, and allowed if returned. Cash or satisfactory reference to accompany order.

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WHOLESALE DEPOT—

**THE BRITISH
HOP PACKING
COMPANY,**

Hop Factors,
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In $\frac{1}{2}$ -lb., 1-lb., 2-lbs., $3\frac{1}{2}$ -lbs., 7-lbs., 14-lbs., 28-lbs., 56-lbs. COMPRESSED PACKETS.

Established
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And (late HENRY TURNER & CO.)

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THOMPSON & CAPPER'S DENTIFRICE WATER.

Sells well everywhere, its beneficent qualities being attested to by physicians in all parts of the world. (*See Testimonials.*)

In 1s. 6d., 2s. 6d., 4s. 6d., and 8s. 6d. Bottles.

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THE BRISTOL AND WEST OF ENGLAND

HOMŒOPATHIC MEDICINE SUPPLY,

37 HIGH STREET, BRISTOL.

IMPORTANT TO CHEMISTS, PATENT MEDICINE VENDORS, AND HOMŒOPATHIC MEDICINE AGENTS.

Tinctures or Pilules in Bulk of 4, 8, or 16 oz. Bottles, or put up ready for sale in Two Drachm and Half-ounce Bottles. Before ordering elsewhere send for Wholesale Price List to the Proprietor of the

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"RELIABILITY and general excellence of manufactures."

A VERDICT UNIVERSALLY SUSTAINED.

Firmly recognising the fact that the success of the medical practitioner and the surgeon depends in no small degree upon the integrity of the remedial agents and appliances which they employ, we have persistently adhered to the policy of making, in all our products,

BUT ONE QUALITY, AND THAT "THE BEST."

Our facilities for the production of our specialities are unequalled in extent and completeness by any other concern in the World. Our establishment represents an industry of which we are the founders, and which owes its universal recognition to our investigations and our efforts to bring these preparations up to Pharmacopœial standards and the necessities of medical and surgical practice.

The status of the whole plaster business is well shown by the analysis of Belladonna Plasters, the leading article on the list of spread goods, made in March, 1886, by Dr. Albert B. Prescott, Professor of Chemistry at the University of Michigan, and President of the American Chemical Society, from goods purchased by him in open market. The assays were made by the same process, in parallel operations, for the quantity of total belladonna alkaloids, estimated as atropine, with the following results:

BRAND OF PLASTER.	Per Cent. of Atropine in the Plaster Mass.	Quantity of Atropine in one Plaster (avg.)
Seabury & Johnson	0.39	0.543 grains
Grosvenor & Richards	0.17	0.264 "
T. W. Heinemann	0.15	0.230 "
Geo. E. Mitchell (Novelty Plaster Works)	0.05	0.045 "
The Porous Plaster Co. of the Village of Sing Sing, Proprietors of Allcock's Porous Plaster (Star Brand)	0.06	0.062 "

We have repeatedly demonstrated the

SUPERIORITY OF OUR ABSORBENT COTTON, LINT, AND GAUZE,

and the utter lack of absorbency which characterises several other makes. This is a matter easily tested by dropping a bit of the cotton or lint into water, and noting the rapidity with which it sinks to the bottom. Extreme absorbency is important when absorbent materials are desired at all. Some of our competitors are crafty enough to purchase our own lint and cotton, and re-wrap them under their own labels, for the purpose of making tests, but uniform excellence will be found only in goods bearing our brand.

THE PERFECTION OF OUR GOODS

means an outlay of time and money which forbids our attempting to compete for the "Cheap John" trade, but no other manufacturer can place upon the market goods equal in quality to our own at as reasonable prices as prevail throughout our list.

DISCHARGED EMPLOYEES AS WOULD-BE COMPETITORS.

We are obliged to issue a word of caution to physicians and the trade against parties who advertise themselves as manufacturers of plasters, and base their claims to confidence on the assertion that they have, at some time or other, been in the employ of Seabury & Johnson. This claim is usually made to convey the impression that the claimant was our "Superintendent," or occupied some position which made him master of the details of our business, and qualified him to operate works of this class. Thus far among those who have attempted to trade upon their past connection with us are a discharged night-watchman, a foreman of one of our departments, and a former engineer and general mechanic. Not one of these men possesses or can possess the slightest knowledge of pharmacy, and no man has ever left any department of our factory whose services it was worth while to retain. Nearly every merchant, especially if he be also a manufacturer of anything, has had experiences similar to our own, and in view of the facts stated will readily understand, when offered goods claimed to be made after the formulas or by the process employed by us, that all such claims are spurious and are made with fraudulent intent, and that the goods will in no way resemble our own, either in their composition or their durability. A fact of which further assurance can be obtained from a careful comparison of analysis of the two makes. We have taken legal steps to protect the trade and ourselves from the fraudulent pretensions of this class of pretenders, which is liable to be increased every time we discharge an employee.

SEABURY & JOHNSON,

1 AND 2 AUSTRALIAN AVENUE, LONDON, E.C.,

PROPRIETORS OF THE SEABURY PHARMACAL LABORATORIES,

*Manufacturers of Indiarubber Pharmacopœial and Surgical Plasters, Antiseptic Dressings and Absorbents,
Bandages, Oiled Silk and Muslin, and Surgical Dressings of all Descriptions.*

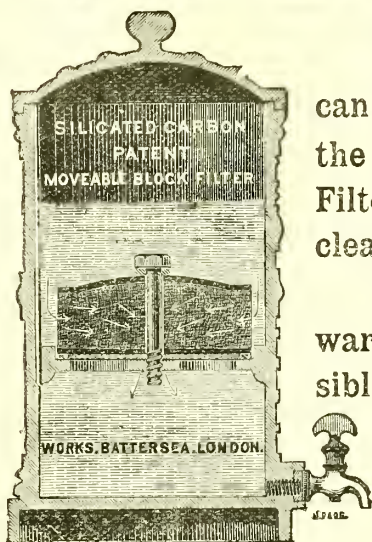
GEO. J. SEABURY, President.

J. M. PETERS, Treasurer.

ROBERT J. SEABURY, Secretary.

SILICATED CARBON PATENT MOVABLE BLOCK FILTERS.

LIBERAL DISCOUNT TO THE TRADE.



(Section.)

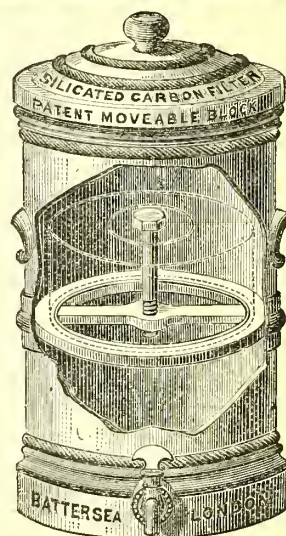
Domestic Filters (as above), in Cream-coloured Stoneware, with Plated Taps and Patent Movable Blocks:—

No. 27. O. 1 gal. 10/6 each.	D. 6 gals. 42/- each.
A. 1 " 14/6 "	E. 8 " 52/- "
B. 2 " 21/- "	F. 12 " 70/- "
C. 4 " 32/- "	

The Silicated Carbon Block can be instantly removed, leaving the whole of the interior of the Filter OPEN for inspection and cleansing.

The working parts are stoneware, and no corrosion is possible.

No loose Pan or inner vessel to cause breakage.



(Elevation with Block removed.)

Dining Room Filters, in Marbled China, with Plated Taps and Patent Movable Blocks:—

No. 22. A. 2 gals. 35/- each
B. 5 " 80/- "

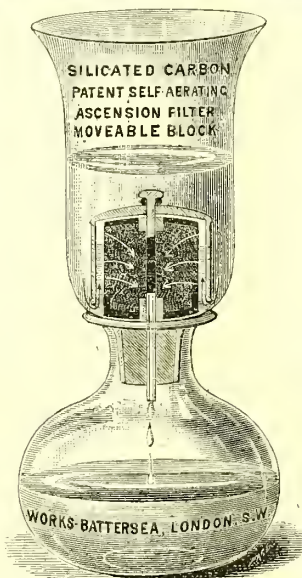
Refrigerative Terra Cotta, do. do.:—

No. 25. 2 gals. 31/6 "

LIBERAL DISCOUNT TO THE TRADE.

THE NEWEST AND MOST EFFICIENT TABLE FILTER.

The water ascends in the direction indicated by the arrows, and each time the top glass is filled the air under the porcelain cover is forced through the Silicated Carbon Block, which is thus automatically aerated.



By simply removing the glass peg the Silicated Carbon Block is at once released for cleansing or renewal.

The Carbon Blocks are efficiently cleansed by boiling, and extra blocks can be supplied with each Filter when desired.

No. 38.

PLAIN GLASS.

No. O—1 Pint	...	...	2/6 each.
" A—2 "	...	...	4/- "
" B—3 "	...	...	5/6 "

No. 38.

ENGRAVED GLASS.

No. O—1 Pint	...	...	3/6 each.
" A—2 "	...	...	5/6 "
" B—3 "	...	...	7/6 "

FOR FULL ILLUSTRATED LISTS WRITE TO THE

SILICATED CARBON FILTER COMPANY,
CHURCH ROAD, BATTERSEA, LONDON, S.W.

SUPPLEMENT TO THE CHEMIST & DRUGGIST

For the ADVERTISEMENT of

Businesses for Disposal, Employers Wanting Assistants, Assistants Wanting Situations, Partnerships, Premises to Let, Sales by Auction, &c.,

AND

EXCHANGE COLUMN FOR DISPOSAL OF SURPLUS STOCK, ETC.

Advertisements for this Supplement must be prepaid, and can be received at the Office, 42 Cannon Street, until 5 p.m. on Thursday afternoon of each week.

TERMS—Businesses for Disposal, Employers wanting Assistants, Partnerships, Businesses to Let, Sales by Auction, 5 lines (fifty words) and under, 3s. 6d.

Assistants wanting Situations, 12 words for 1s.; every additional 3, 4, or 6 words, 6d.

FOR EXCHANGE COLUMN TERMS SEE PARAGRAPH AT THE HEAD OF THAT SECTION.

CHEMISTS' TRANSFERS.

MESSRS. ORRIDGE & CO., 32 LUDGATE HILL, E.C.,
CHEMISTS' TRANSFER AGENTS.

May be consulted at their Offices on matters of SALE, PURCHASE, and VALUATION. Immediate attention given to Foreign Commissions. Terms for Valuation on application. N.B.—No CHARGE TO PURCHASERS.

THE BRITISH AND COLONIAL PHARMACEUTICAL AGENCY FOR THE SALE AND TRANSFER OF CHEMISTS' BUSINESSES, the Negotiation of Partnerships, &c., Investigations, Valuations, Insurances, Accountancy, Recovery of Debts, Inquiries, Locum Tenens, and Assistants. Prospectus, with terms, free by post or on application. Address, the Secretary, 27 Margaret Street, Cavendish Square, London, W.

SALE BY AUCTION.

38 HOUNDSDITCH, CITY.

MESSRS. BERDOE & CO. are instructed to Sell by Auction all the Fittings, Fixtures, Utensils, and Drugs of the business of Mr. Hillgenburg, 38 Houndsditch, and will sell the same in lots on the premises on Monday, July 26, at 1 o'clock precisely. On view Saturday, July 24, and morning of sale. Catalogues of the Auctioneers, 30 Jewry Street, Aldgate, City.

SALE BY TENDER.

1 COVENTRY ROAD, BORDESLEY, BIRMINGHAM.

F. J. BRETT is instructed by Mr. A. L. Smith to Sell by Tender in one lot as a going concern the old-established light Retail, Prescribing, and Dispensing Business at the above address. The returns last year were £1,008 6s. (of which about £200 was in mechanical dentistry), and of a very profitable character. The shop has a fine commanding stand, is well fitted, and has excellent dwelling-house attached, with private entrance and large yard; rent £45, with 5 years of lease to run. As the health of Mr. Smith's family renders it imperative that he should go into the country, no reasonable offer will be refused. Tenders will be opened by F. J. Brett, of Leicester, on the above premises on Friday, July 30. Tender forms and further particulars can be had on the premises, or from F. J. Brett, Leicester.

BUSINESSES FOR DISPOSAL.

£200.—In consequence of continued illness, a Genuine Retail and Dispensing Trade to be disposed of at a low price; the returns are about £450 yearly, at full prices; Agency attached, yielding over £70 net profit yearly; the shop is well situated in a small market town in North of England. "Chemicus," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LONDON SUBURB.—Although this has only been opened a few months is doing £7, and cannot but do double before long, as there is no opposition; well-fitted shop and house; large well-stocked garden; rent £25; price, if bought at once, £350. "Chemist," care of Barclays, 95 Farringdon Street, E.C.

CHEMIST'S & STATIONER'S.—Picturesque Kentish village; nearest opposition 3 miles; full price patents; good stock; no heavy trade; rent £19 18s.; eight rooms besides shop, private door, back entrance; large garden; established 1842, changed hands but once; returns £300 (profitable); £230 or reasonable offer. Baiss Brothers, Wholesale Druggists, Jewry Street, London.

GENUINE old-established Retail and Dispensing; on bank of the Thames, Middlesex; thoroughly satisfactory reasons for selling; good house with separate entrance; large garden; long lease; returns £550, at large profits; very healthy; household furniture (nearly new) can go with business. J. P., care of Herrings & Co., Aldersgate Street.

CHESHIRE, close to Liverpool.—Dispensing and light Retail Business for sale in rapidly increasing neighbourhood; good house; pleasant situation; near to beach; a first-class opportunity for one with small capital; principals only treated with. Address, "Branch," Evans, Sons & Co., Hanover Street, Liverpool.

FOR DISPOSAL.—A small but increasing Business in a seaside town. For particulars, apply to Smith & Sons, Wholesale Druggists, Norwich.

TELEPHONE No. 1852.

JOURNAL OF THE TRADE. WEEKLY.

PUBLISHED EVERY SATURDAY, AT THE OFFICES, 42 CANNON STREET, LONDON, E.C.

BRANCH OFFICES:

AUSTRALIA—Normanby Chambers, Melbourne. **UNITED STATES**—41 Temple Court, New York.

Exchange Column.

THE Exchange Column is a special feature of **The Chemist and Druggist**, and has proved most interesting and successful. Every week it contains about a hundred advertisements of second-hand or surplus stocks of Drugs and other necessities to the Chemist's business for disposal or wanted. It brings Chemists of all parts of the country into communication in regard to the sale and purchase of bargains, and scores of testimonials as to the usefulness and profit of this section of **The Chemist and Druggist** have been received.

We reserve to ourselves the right to decline any advertisement sent to us for this department, and, of course, general business advertisements are not admitted.

TERMS.

Advertisements in this department must be paid for in advance. From this rule no deviation can be made. Insertions are charged at the rate of **1d.** per word, provided the advertiser attaches his name and address, for each word of which he must also pay at the same rate; or, if he pays **1d.** per word, his name and address will be registered and a figure attached to his advertisement. All correspondence referring to that figure must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, 42 Cannon Street, E.C., " and the figure must be distinctly endorsed upon the envelope. Letters will then be forwarded to their proper destination. A price is counted as one word, as *e.g.*, £1. 10s. 6d.

Please write out your advertisement in this diagram, one word in each space. You will then see at a glance how much the cost will be—namely, **1d.** per word, if your address is kept private; **4d.** per word, if your name and address is attached.

DEPOSIT OF MONEY.—In order to ensure safety we offer the following system :—The purchaser of anything advertised in the Exchange Column may remit the amount to us. We acknowledge receipt to both parties by post cards, and only pay the money deposited on the advice of the remitter. Whether returned to him or paid to the seller, we charge a commission of 6d. on any transaction of £3 or less, or 1s. if above that amount.

[illegible]

Please note that all advertisements of surplus stock, second-hand books, shop fittings, Formulæ, rare or unusual proprietary articles, are accepted for the "Exchange Column," but not *general* announcements. Stamps are taken in payment.

Remittances payable to EDWARD HALSE, at the G.P.O., London, and crossed MARTIN & Co.

Subscription Rate: 10s. per Annum, 52 Weekly Numbers and Diary, all Post-free. Single Copies of "THE CHEMIST AND DRUGGIST," 4d. each.

If you have no surplus stock to Advertise just now, keep this Page for future use.

